

# POLICE DEPARTMENT LOCKER ROOMS RENOVATIONS



A Vidaris Company

250 DORCHESTER AVENUE  
BOSTON, MA 02127

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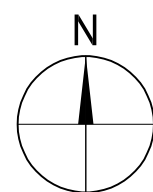
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POLICE  
DEPARTMENT  
LOCKER ROOMS  
RENOVATIONS



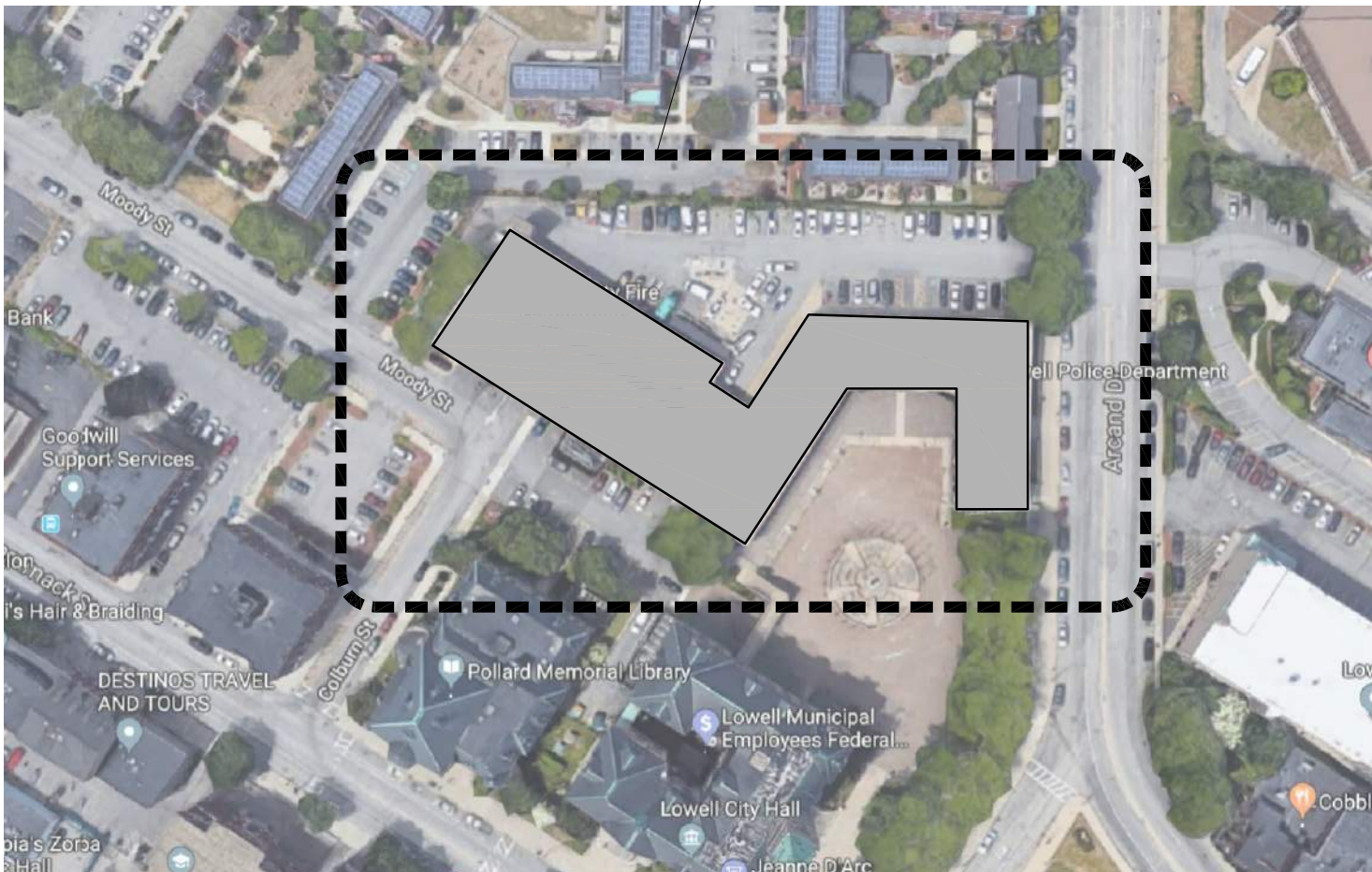
CITY OF LOWELL

## LOCATOR MAP



NOTE:  
CONTRACTOR TO FIELD VERIFY ALL  
DIMENSIONS AND CONDITIONS.

POLICE DEPARTMENT LOCKER ROOMS  
RENOVATIONS  
50 Arcand Drive, Lowell, MA 02152



## DRAWING SHEETS:

### GENERAL

G0-01 COVER SHEET

### ARCHITECTURAL

D1-01 DEMOLITION PLAN PATROLMAN  
D1-02 DEMOLITION PLAN SUPERIOR OFFICE  
A1-01 PROPOSED PLAN PATROLMAN  
A1-02 PROPOSED PLAN SUPERIOR OFFICER  
A1-03 REFLECTED CEILING PLAN PATROLMAN  
A1-04 REFLECTED CEILING PLAN SUPERIOR OFFICER AND DETAILS  
A2-01 PROPOSED ELEVATIONS PATROLMAN & SUPERIOR OFFICER  
A3-01 ROOM FINISH AND DOOR SCHEDULES  
A3-02 EXTERIOR CLERESTORY WINDOW SECURITY SCREEN

### PLUMBING

P0-01 PLUMBING LEGEND, NOTE, SYMBOLS  
LIST AND SCHEDULES  
P0-02 PLUMBING DETAILS AND RISER DIAGRAMS  
P1-01 PLUMBING DEMOLITION PLANS  
P2-01 PLUMBING NEW WORK PLANS

### MECHANICAL

H0-01 HVAC LEGEND, NOTES AND ABBREVIATIONS  
H0-02 HVAC DETAILS AND SEQUENCES  
H1-01 HVAC DEMOLITION PART PLANS  
H2-01 HVAC NEW WORK PART PLANS

### ELECTRICAL

E0-01 ELECTRICAL LEGEND AND NOTES  
ED-01 ELECTRICAL DEMOLITION FLOOR PLAN  
E1-01 ELECTRICAL LOW VOLTAGE NEW WORK FLOOR PLAN  
FA0-01 FIRE ALARM NEW WORK FLOOR PLAN

## GENERAL NOTES:

- G0 THE CITY OF LOWELL AND CBI CONSULTING, LLC SHALL BE ADDED AS ADDITIONAL INSUREDS TO THE CONTRACTOR'S COMMERCIAL GENERAL LIABILITY, AUTOMOBILE LIABILITY AND UMBRELLA POLICIES FOR THIS PROJECT. ALL OF THE CONTRACTOR'S INSURERS SHALL PROVIDE A WAIVER OF SUBROGATION IN FAVOR OF CITY OF LOWELL AND CBI CONSULTING, LLC.
- G1 CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND COORDINATING ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. IN CASE OF CONFLICT, THE ARCHITECT SHALL BE NOTIFIED AND SHALL RESOLVE THE CONFLICT. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS.
- G2 IN ANY CASE OF CONFLICT BETWEEN OR WITHIN THE DRAWINGS AND THE PROJECT SPECIFICATIONS OR WITHIN THE DRAWINGS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN AT THE SOLE DISCRETION OF THE ARCHITECT.
- G3 THE CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT PRIOR REVIEW BY THE ARCHITECT.
- G4 WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED. ANY CONDITION FOUND NOT DETAILLED SHALL BE CONSTRUCTED IN A MANNER SIMILAR TO THAT OF THE TYPICAL DETAILS.
- G5 ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND LOCAL LAWS AND REGULATIONS.
- G6 GENERAL CONTRACTOR SHALL COORDINATE LOCATIONS OF OPENINGS, PITS, BOXES, SUMPS, TRENCHES, SLEEVES, DEPRESSIONS, GROOVES, AND CHAMFERS, WITH MECHANICAL, ELECTRICAL AND PLUMBING TRADES.
- G7 THE STRUCTURAL DESIGN OF THE BUILDING IS BASED ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS. NO PROVISIONS HAVE BEEN MADE FOR CONDITIONS OCCURRING DURING CONSTRUCTION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAKE PROPER AND ADEQUATE PROVISIONS FOR STABILITY OF, AND ALL STRESSES TO, THE STRUCTURE DUE TO ANY CAUSE DURING CONSTRUCTION.
- G8 CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REQUEST ALL DIMENSIONS OR INFORMATION REQUIRED TO PERFORM THE WORK FROM THE ARCHITECT. WORK COMPLETED BY THE CONTRACTOR WITHOUT DIMENSIONS OR INFORMATION SHALL BE DONE AT HIS OWN RISK AND SHALL BE REMOVED AND REINSTALLED TO THE SPECIFICATIONS OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
- G9 MEANS AND METHODS OF CONSTRUCTION AS WELL AS COMPLIANCE WITH OSHA AND OTHER SAFETY LAWS AND REGULATIONS IS EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR, HIS SUBCONTRACTOR(S), SUPPLIERS, CONSULTANTS AND SERVANTS.
- G10 FOR ALL ITEMS THAT ARE TO BE REUSED AND/OR REINSTALLED AS PART OF THE WORK:
- ALL ITEMS THAT ARE TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. IF ANY DAMAGE OCCURS THE CONTRACTOR SHALL REPAIR THE ITEM SO IT IS IN A LIKE NEW CONDITION OR REPLACE IT WITH A NEW ITEM THAT FUNCTIONS THE SAME OR BETTER THAN THE ORIGINAL ITEM.
  - ALL ITEMS THAT ARE TO BE TEMPORARILY REMOVED & REINSTALLED ARE TO BE CAREFULLY REMOVED AND MOVED TO A PROTECTED AREA ON SITE OR TO AN OFF SITE FACILITY. THE ITEM IS TO BE CLEANED AND PREPARED FOR REINSTALLATION. ALL FITTINGS AND CONNECTION POINTS ARE TO BE INSPECTED AND REPAIRED. PROVIDE NEW FASTENERS AND CAREFULLY TRANSPORT THE ITEM BACK TO ITS ORIGINAL LOCATION AND CAREFULLY REINSTALL. IF ANY DAMAGE OCCURS THE CONTRACTOR SHALL REPAIR THE ITEM SO IT IS IN A LIKE NEW CONDITION OR REPLACE IT WITH A NEW ITEM THAT FUNCTIONS THE SAME OR BETTER THAN THE ORIGINAL ITEM.

## LIST OF ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR
APPROX.	APPROXIMATE
BIT.	BITUMINOUS
BUR	BUILT UP ROOFING
CB	CATCH BASIN
CMU	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONT.	CONTINUOUS
D.S.	DOWNSPOUT
EQ	EQUAL
E.W.	EACH WAY
FD	FLOOR DRAIN
HC	HANDICAP
HT	HEIGHT
I IN	INVERT IN
I OUT	INVERT OUT
ID	INTERIOR DIAMETER
L.C.C.	LEAD COATED COPPER
MAX.	MAXIMUM
MIN.	MINIMUM
M.O.	MASONRY OPENING
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OD	OVERHEAD DOOR
O.H.	OPPOSITE HAND
PAV.	PAVERS
P.T.	PRESSURE TREATED
SIM.	SIMILAR TO
S.S.	STAINLESS STEEL
T.	TREAD
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V.I.F.	VERIFY IN FIELD
VCB	VINYL COVE BASE
W/	WITH
Z.C.C.	ZINC COATED COPPER
Ø	DIAMETER
+/-	PLUS OR MINUS

## SYMBOL LEGEND

	SEE DETAIL 88 ON SHEET AX-XX
	BREAK LINE
	DIMENSION LINE
	EXTENT
	DOOR TAG
	WINDOW TAG

## CONTACT INFORMATION:

### Architect



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### Owner


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Purchasing Department, Room 60  
City of Lowell,  
375 Merrimack Street  
Lowell, MA 01852  
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Email: pmvaughn@lowellma.gov

## BID DOCUMENTS

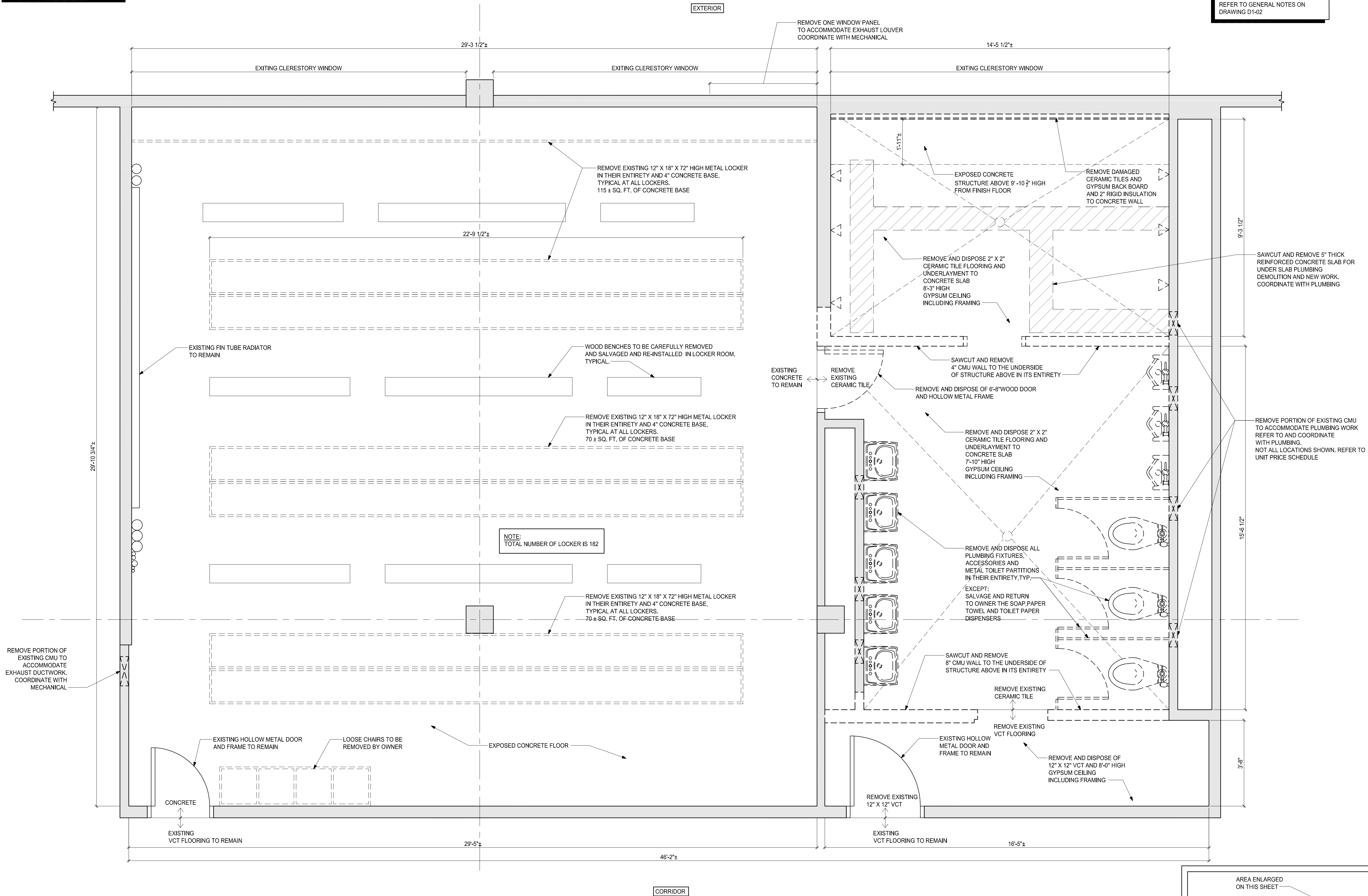
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Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: N.T.S.

# G0-01

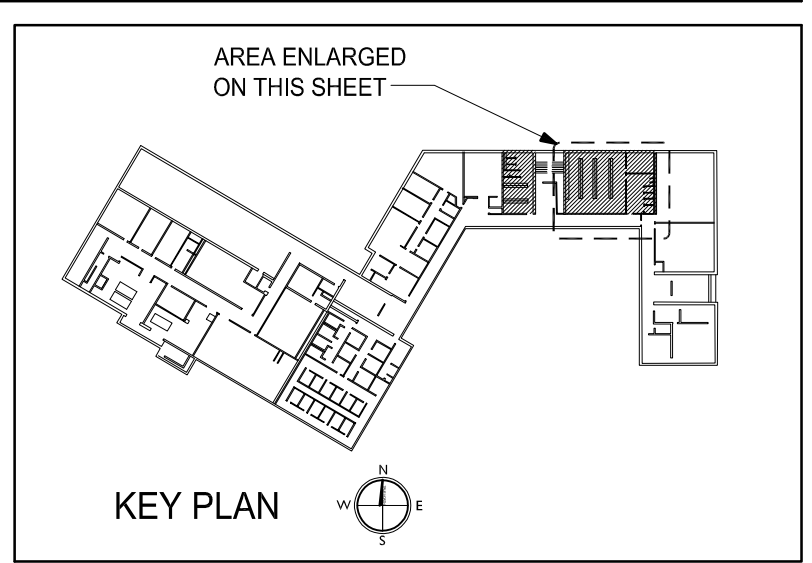


NOTE: SOLID LIGHT GRAY HATCH  REPRESENTS EXISTING CONSTRUCTION TO REMAIN.  
DASHED LINES INDICATE WORK TO BE DEMOLISHED

NOTE:  
REFER TO HAZARDOUS MATERIAL  
REPORT FOR SCOPE OF WORK.  
PRIOR TO COMMENCE OF ANY WORK.  
REFER TO GENERAL NOTES ON  
DRAWING D1-02



1 ENLARGED DEMOLITION PLAN-  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/2"=1'-0"



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## POLICE DEPARTMENT LOCKER ROOMS RENOVATIONS



CITY OF LOWELL

Drawing Title:

## DEMOLITION PLAN PATROLMAN

Revisions:

Submission:

## BID DOCUMENTS

Date: 3/04/2020  
Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

# D1-01



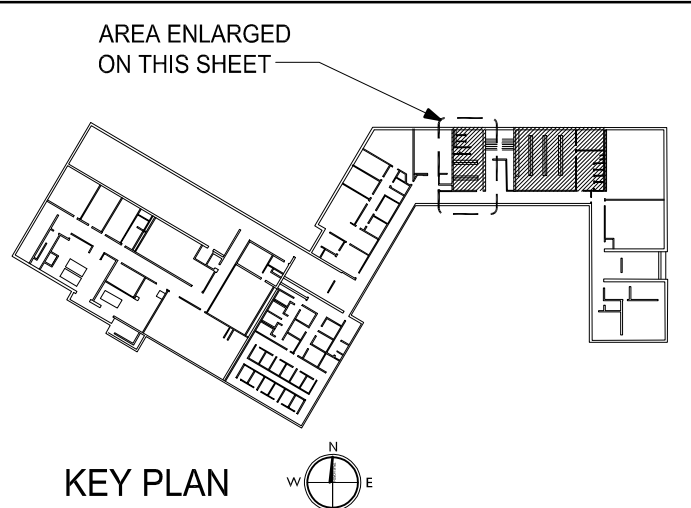
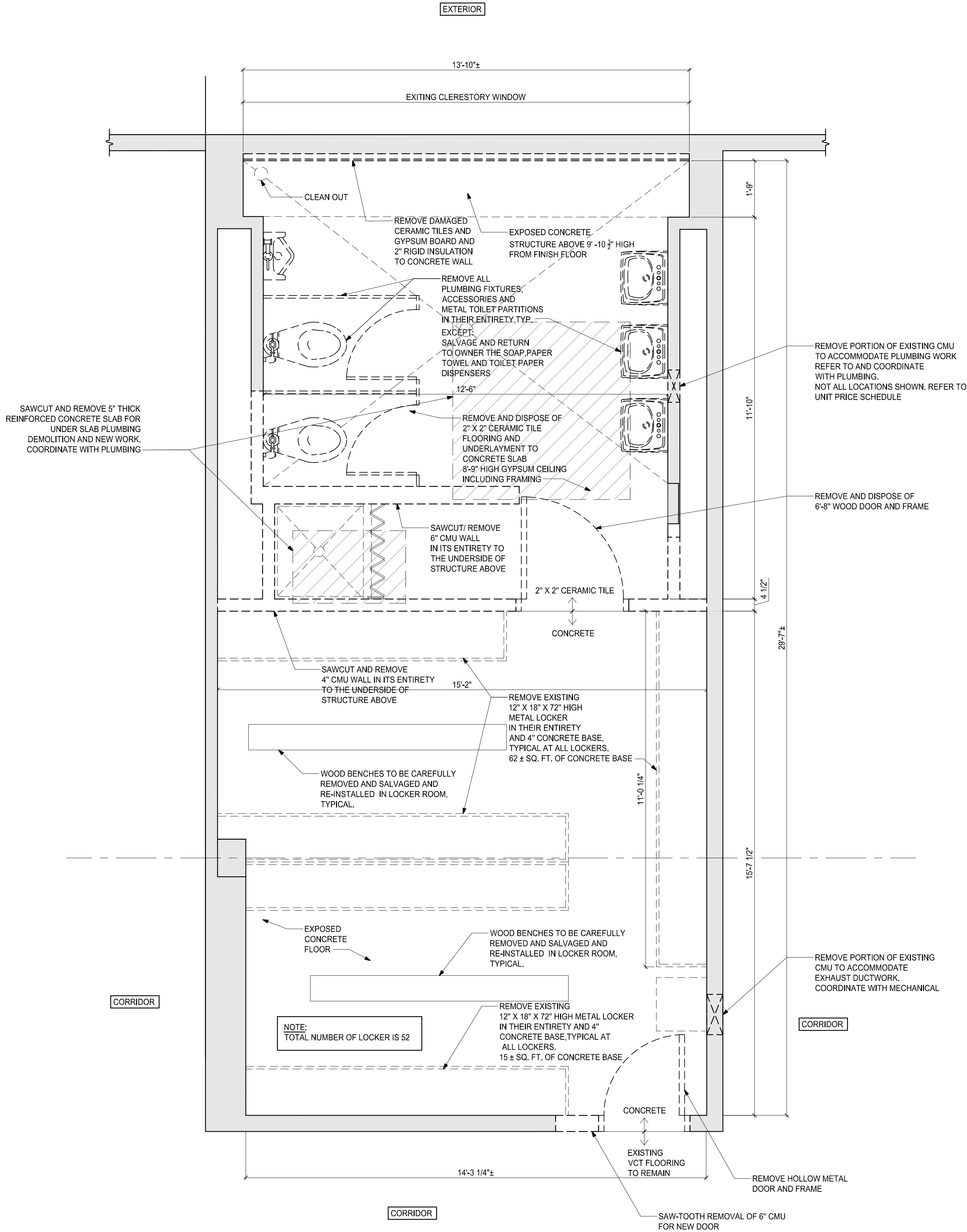
NOTE: SOLID LIGHT GRAY HATCH  
REPRESENTS EXISTING CONSTRUCTION  
TO REMAIN.  
DASHED LINES INDICATE WORK TO BE  
DEMOLISHED

#### GENERAL NOTES

SEE SPECIFICATIONS FOR MORE INFORMATION

- A THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO ANY DEMOLITION OR CONSTRUCTION. ANY DISCREPANCIES RELATING TO THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- B CONTRACTOR TO BE AWARE OF SELECTIVE DEMOLITION AT ALL SECTIONS OF WORK REVIEWING ALL NEW AND REHAB. DETAILS TO DETERMINE WHICH IS TO BE REMOVED OR TO REMAIN AND WILL BE RESPONSIBLE FOR REPLACEMENT IN-KIND ALL WORK INADVERTENTLY REMOVED.
- C THE CONTRACTOR SHALL REMOVE ALL EXISTING INTERIOR PARTITIONS INDICATED FOR DEMOLITION TO THEIR FULL HEIGHT UP TO STRUCTURE, UNLESS OTHERWISE NOTED AND / OR DETAILED. LEAVE ALL NEWLY EXPOSED AND / OR ADJACENT SURFACES SMOOTH AND CLEAN FOR PROPER INSTALLATION OF NEW FINISHES.
- D AT LOCATIONS OF MASONRY WALL DEMOLITION WHERE ANY PORTION WILL BE EXPOSED TO VIEW, CONTRACTOR SHALL CUT-OUT EXISTING MASONRY UNITS AT LINE OF NEW MEETING EXISTING AND MASON TO TOOTH-IN NEW, SUCH AS TO ALLOW NEW AND EXISTING MASONRY SIZE COURSING AND FINISH TO GIVE A CONTINUOUS APPEARANCE.  
AT LOCATIONS OF MASONRY WALL DEMO PERPENDICULAR TO AN EXISTING MASONRY WALL THAT WILL BE EXPOSED, CONTRACTOR SHALL CUT OUT DAMAGED UNITS TO A MINIMUM DEPTH OF 3" TO ALLOW FOR MASONRY SOAP PATCHING (TO MATCH EXISTING ADJACENT) AND MAINTAIN CONTINUOUS APPEARANCE W / ETR ADJACENT.
- E PATCH AND REPAIR SCOPE OF ALL EXISTING TO REMAIN WALLS, FLOORING, AND CEILING DAMAGED DURING DEMOLITION OR REMOVAL OF EXISTING CONSTRUCTION. THIS INCLUDES PATCH & REPAIR DUE TO WORK PERFORMED BY ALL SUBCONTRACTORS. REFER TO DEMO AND ARCHITECTURAL DRAWINGS FOR OTHER AREAS OF PATCHING, REPAIR AND INFILL.
- F PROVIDE SMOOTH, CLEAN SURFACES PREPARED TO RECEIVE NEW INFILL AND / OR FINISHES (AS SCHEDULED) AT ALL MISCELLANEOUS OPENINGS, DEPRESSIONS OR VOIDS LEFT AFTER DEMOLITION. CONTRACTOR TO PROVIDE INFILL OR PATCHING OF ALL SUCH AREAS TO MATCH EXISTING ADJACENT SURFACES.
- G REFER TO MECH., ELEC., OR PLUMBING FOR DEMOLITION COORDINATE W/ M, E. & P DRAWINGS. CONTRACTOR, ALSO SEE ROOM FINISH SCHEDULE AND PARTITION TYPES FOR EXISTING WALL MATERIALS (VIF). PROVIDE LOOSE LINTEL SUPPORT, AS REQUIRED BY MISCELLANEOUS METALS, INSTALLED BY MASON & SIZED BY STRUCTURAL.

NOTE:  
REFER TO HAZARDOUS MATERIAL  
REPORT FOR SCOPE OF WORK,  
PRIOR TO COMMENCE OF ANY WORK



## PARTIAL DEMOLITION PLAN-SUPERIOR OFFICER LOCKER ROOM

SCALE: 1/2"=1'-0"

1

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## POLICE DEPARTMENT LOCKER ROOMS RENOVATIONS



CITY OF LOWELL

Drawing Title:

## DEMOLITION PLAN SUPERIOR OFFICER

Revisions:

Submission:

## BID DOCUMENTS

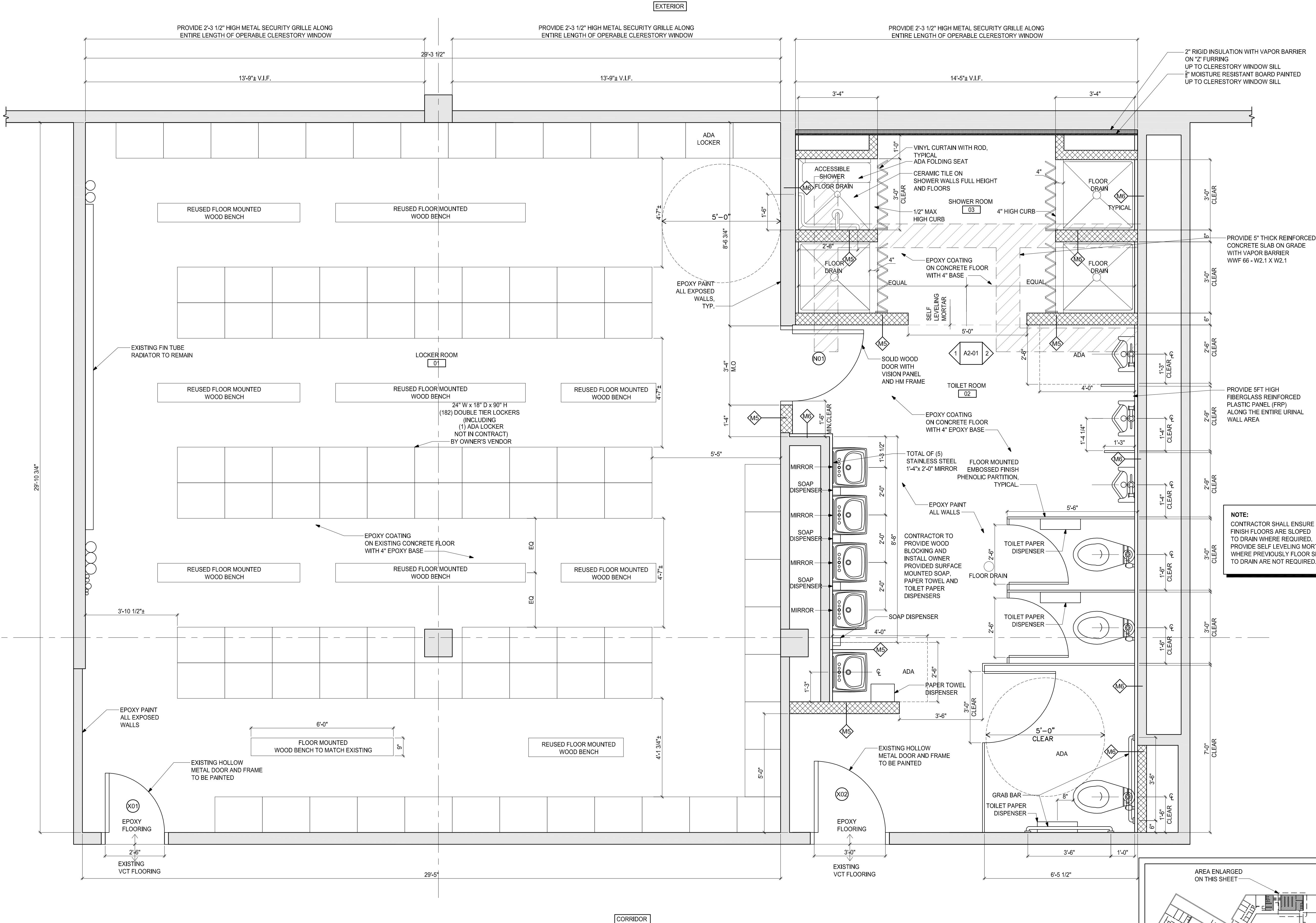
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Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

# DI-02



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1 PROPOSED PLAN-  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/2"=1'-0"



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LOCKER ROOMS  
RENOVATIONS



CITY OF LOWELL

Drawing Title:

PROPOSED PLAN  
PATROLMAN

Revisions:

Submission:

BID  
DOCUMENTS

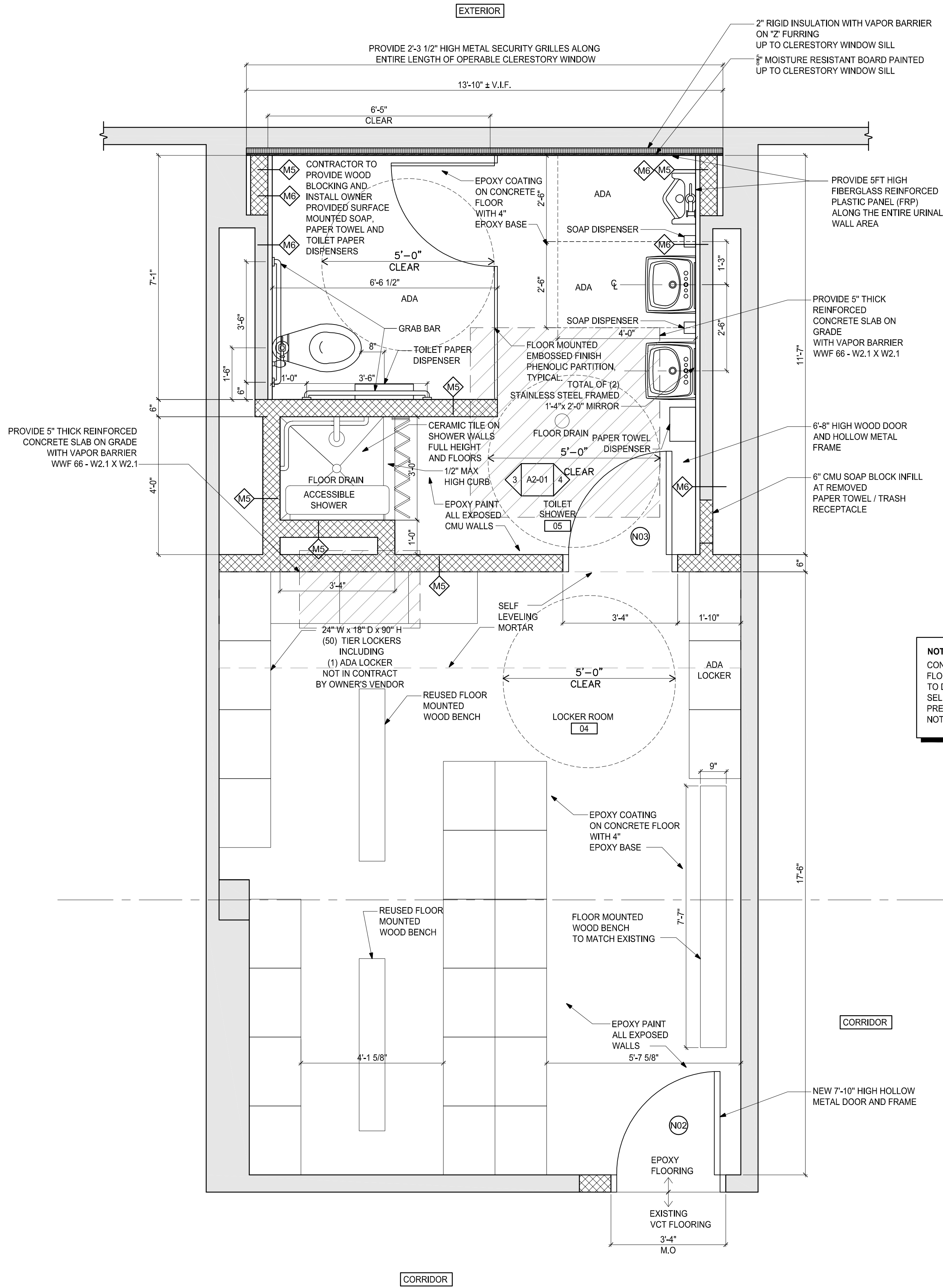
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Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

A1-01

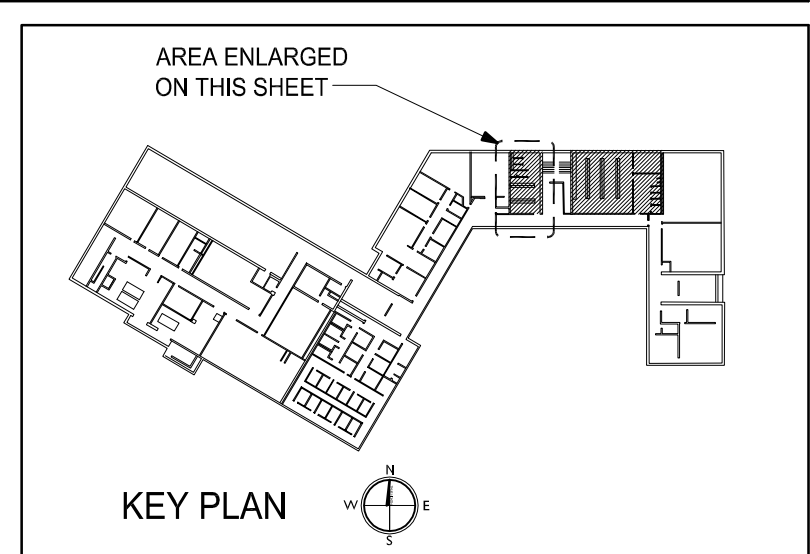


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1 PROPOSED PLAN-  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/2"=1'-0"



AREA ENLARGED IN THIS SHEET



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POLICE  
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LOCKER ROOMS  
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CITY OF LOWELL

Drawing Title:

PROPOSED PLAN  
SUPERIOR OFFICER

Revisions:

Submission:

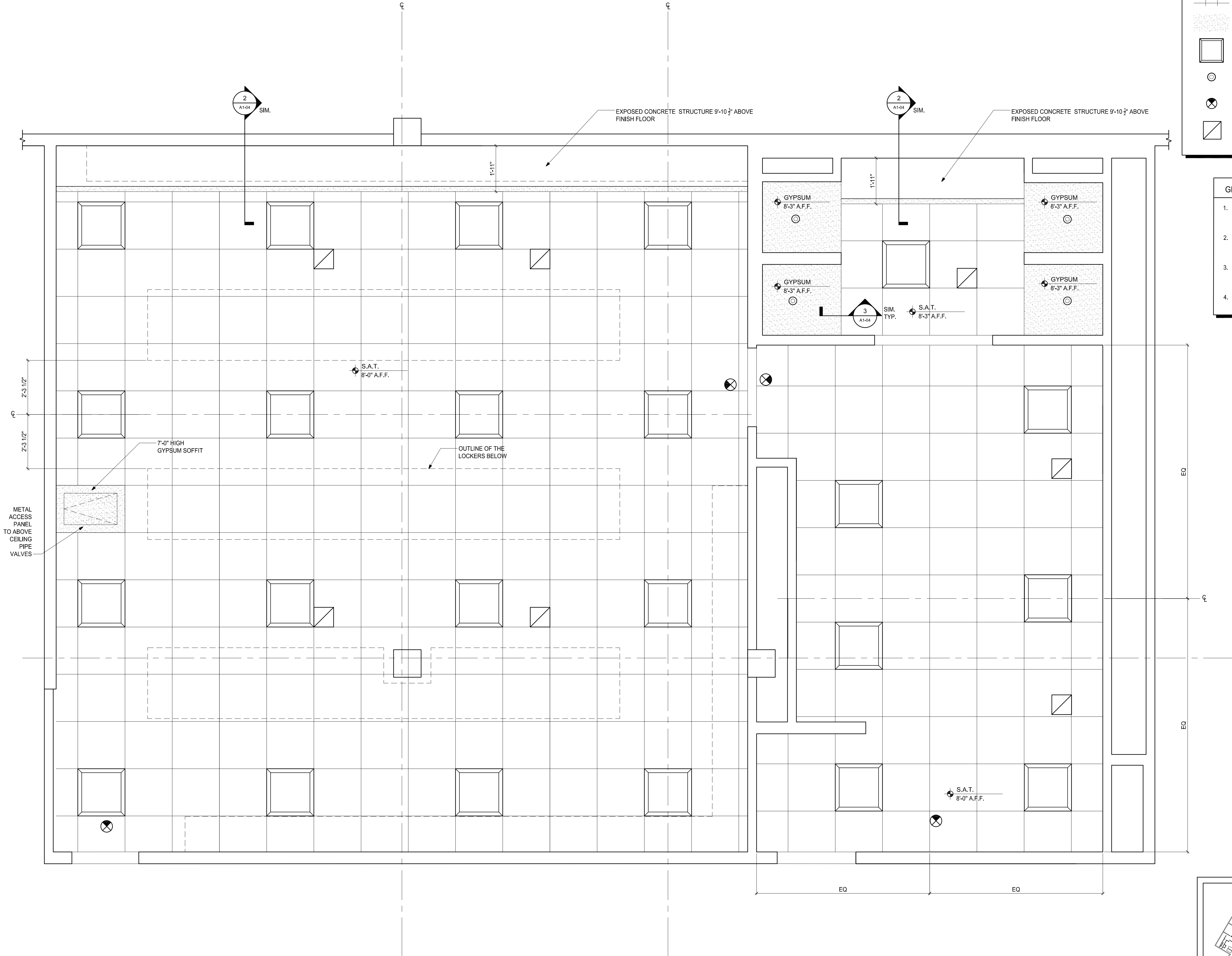
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Date: 3/04/2020  
Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

A1-02



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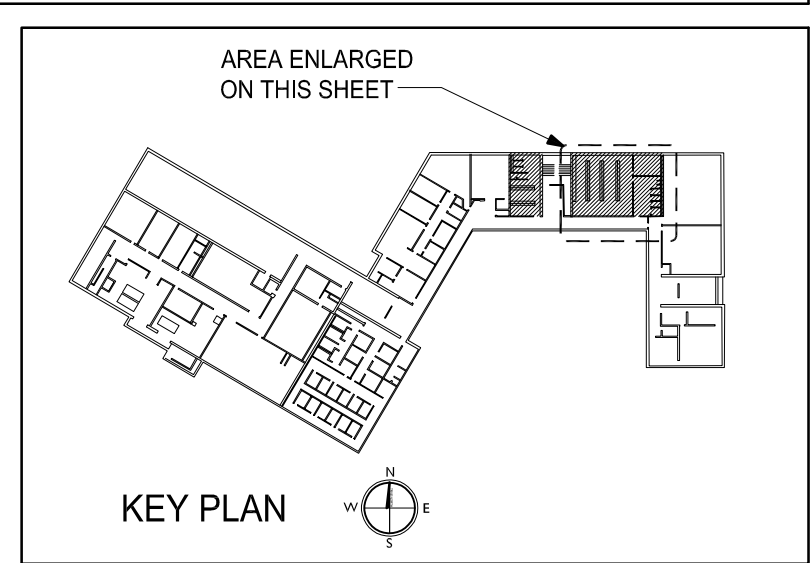


**REFLECTED CEILING PLAN LEGEND**

	2' X 2' SUSPENDED ACOUSTICAL CEILING TILES (SAT) IN EXPOSED "T" GRID
	(1) LAYER OF 5/8" GYPSUM BOARD SUPPORTED BY METAL FRAME
	LIGHT FIXTURE TYPE I, TYPICAL REFER TO ELECTRICAL
	LIGHT FIXTURE TYPE II, TYPICAL REFER TO ELECTRICAL
	EXIT SIGN, TYPICAL REFER TO ELECTRICAL
	HVAC REGISTERS, TYPICAL REFER TO MECHANICAL

**GENERAL NOTES**

- REFER TO MECHANICAL, ELECTRICAL, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION
- NOT ALL CEILING - MOUNTED DEVICES SHOWN FOR CLARITY, INCLUDING SMOKE AND HEAT DETECTORS, ETC.
- AT SOFFIT LOCATIONS, LOWER ALL FIXTURES AND DEVICES TO MATCH SOFFIT HEIGHT.
- CONTRACTOR SHALL COORDINATE FIXTURES AND REGISTERS LOCATIONS WITH LOCKERS LAYOUT



**1** PROPOSED REFLECTED CEILING PLAN- PATROLMEN'S LOCKER ROOM  
SCALE: 1/2"=1'-0"

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**POLICE DEPARTMENT  
LOCKER ROOMS  
RENOVATIONS**

**CITY OF LOWELL**

Drawing Title:  
**REFLECTED  
CEILING PLAN  
PATROLMAN**

Revisions:

Submission:

**BID  
DOCUMENTS**

Date: 3/04/2020  
Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

**A1-03**

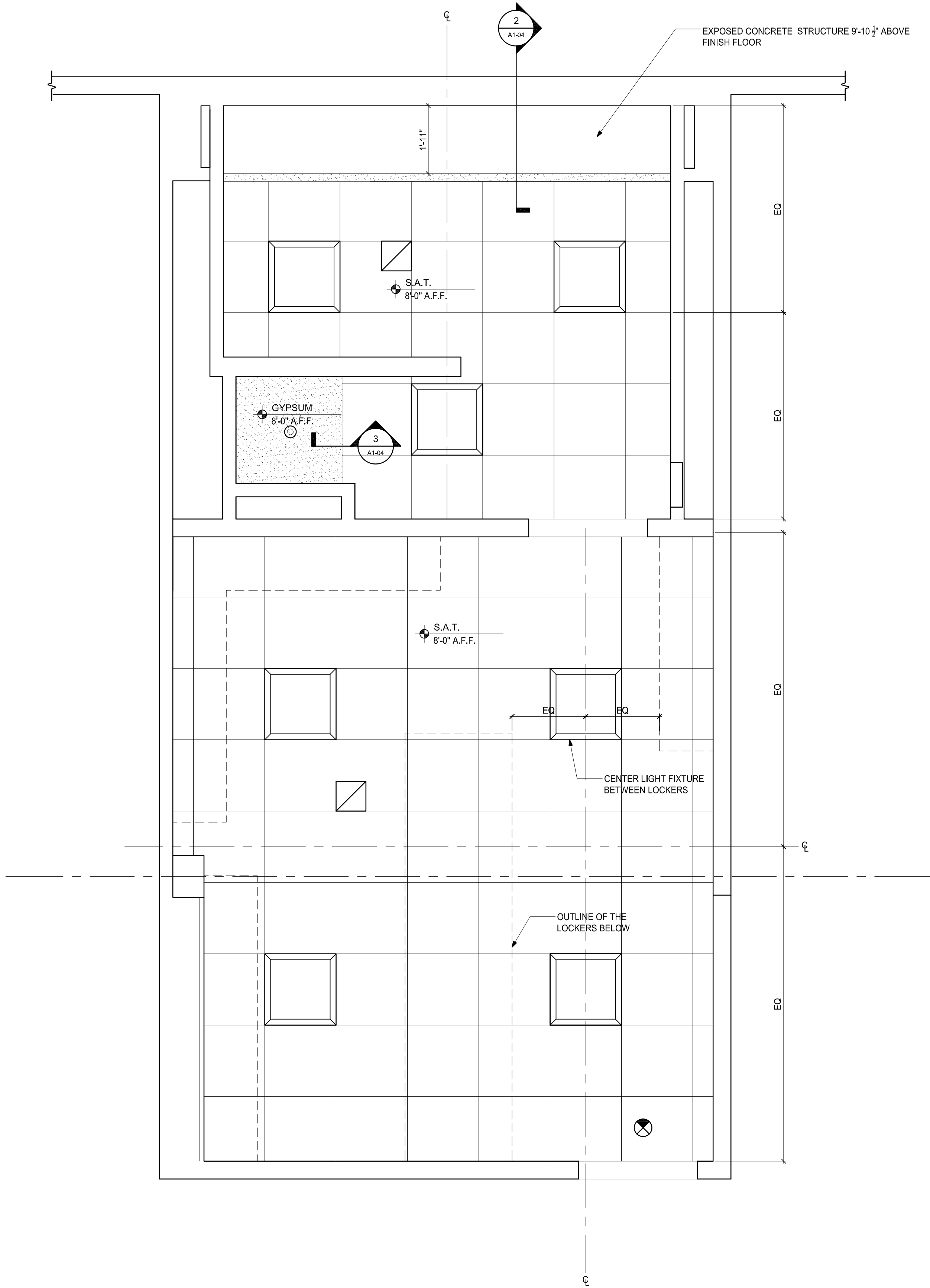


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1

PROPOSED CEILING PLAN-  
SUPERIOR OFFICER LOCKER ROOM

SCALE: 1/2"=1'-0"



REFLECTED CEILING PLAN LEGEND	
	2' X 2' SUSPENDED ACOUSTICAL CEILING TILES (SAT) IN EXPOSED "T" GRID
	(1) LAYER OF 5/8" GYPSUM BOARD SUPPORTED BY METAL FRAME
	LIGHT FIXTURE TYPE I, TYPICAL REFER TO ELECTRICAL
	LIGHT FIXTURE TYPE II, TYPICAL REFER TO ELECTRICAL
	EXIT SIGN, TYPICAL REFER TO ELECTRICAL
	HVAC REGISTERS, TYPICAL REFER TO MECHANICAL

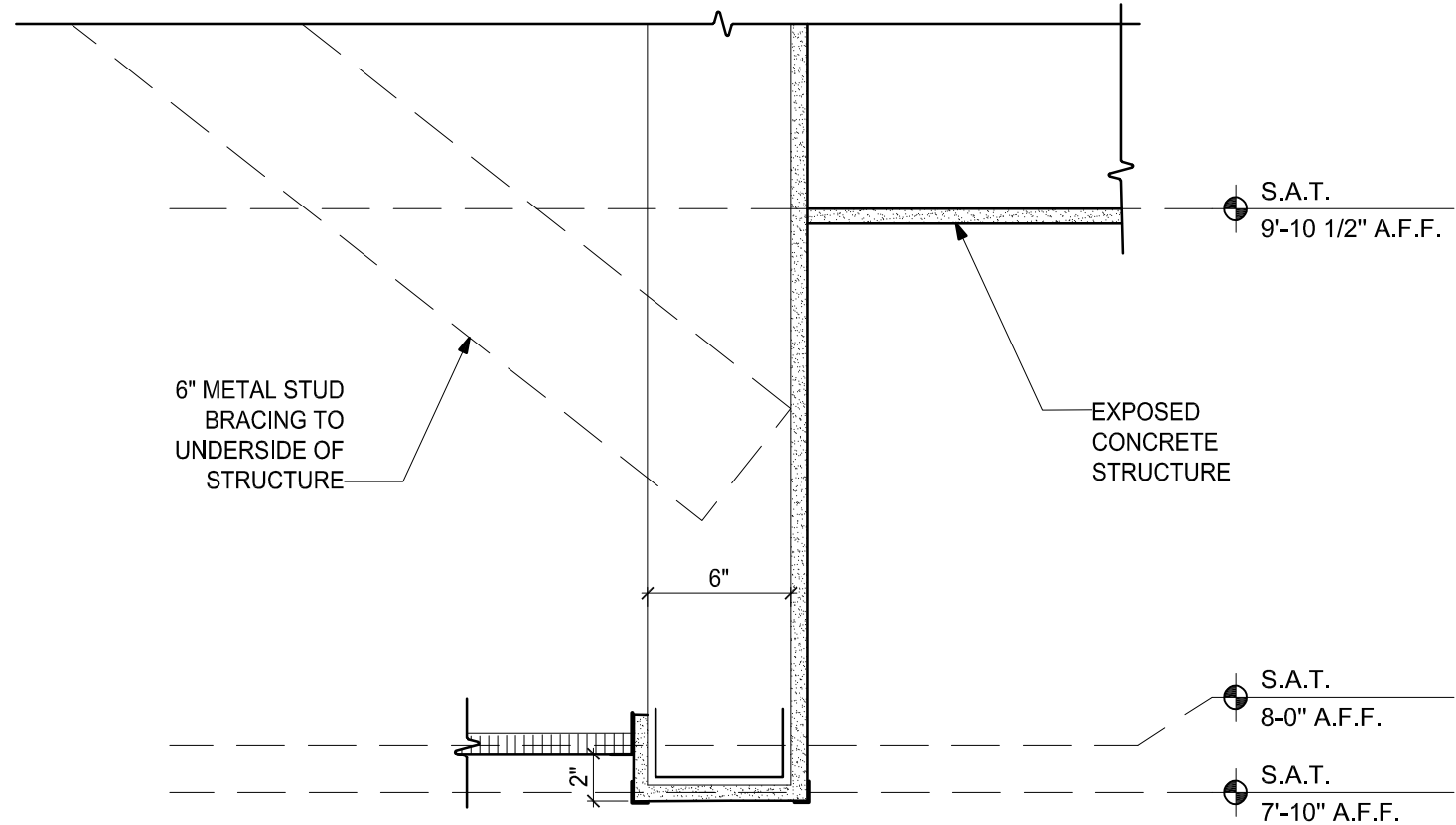
- GENERAL NOTES
1.

REFER TO MECHANICAL, ELECTRICAL, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION
2.

NOT ALL CEILING - MOUNTED DEVICES SHOWN FOR CLARITY, INCLUDING SMOKE AND HEAT DETECTORS, ETC.
3.

AT SOFFIT LOCATIONS, LOWER ALL FIXTURES AND DEVICES TO MATCH SOFFIT HEIGHT.
4.

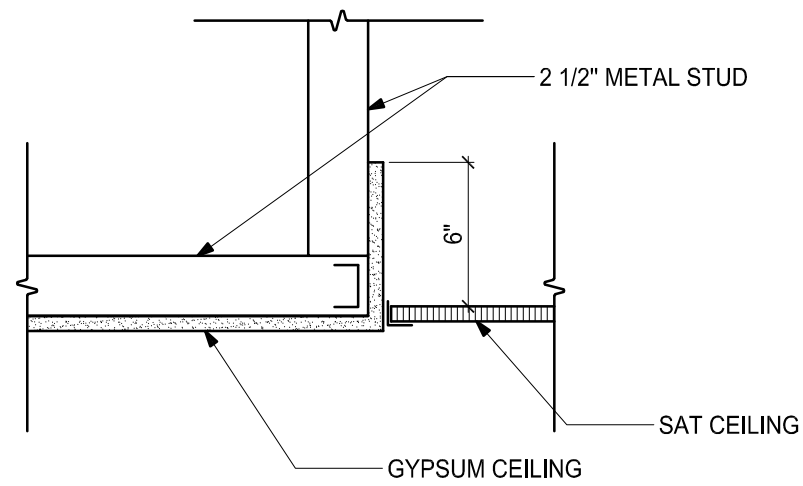
CONTRACTOR SHALL COORDINATE FIXTURES AND REGISTERS LOCATIONS WITH LOCKERS LAYOUT



2

GWB SOFFIT DETAIL:  
FRAMING AT ACT

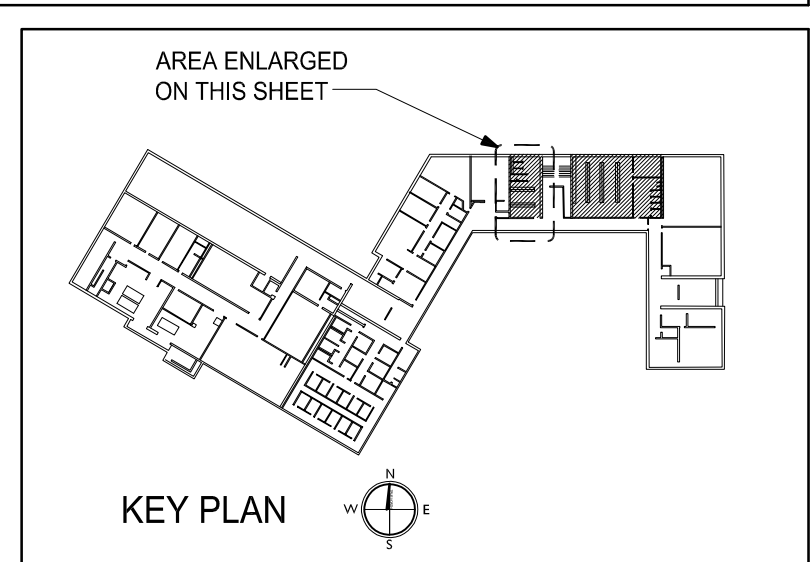
SCALE: 1 1/2"=1'-0"



3

GYPSUM/SAT DETAIL

SCALE: 1 1/2"=1'-0"



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CITY OF LOWELL

Drawing Title:

REFLECTED  
CEILING PLAN  
SUPERIOR OFFICER  
AND DETAILS

Revisions:

Submission:

BID  
DOCUMENTS

Date: 3/04/2020  
Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

A1-04



POLICE  
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RENOVATIONS



CITY OF LOWELL

Drawing Title:

PROPOSED  
ELEVATIONS  
PATROLMAN &  
SUPERIOR OFFICER

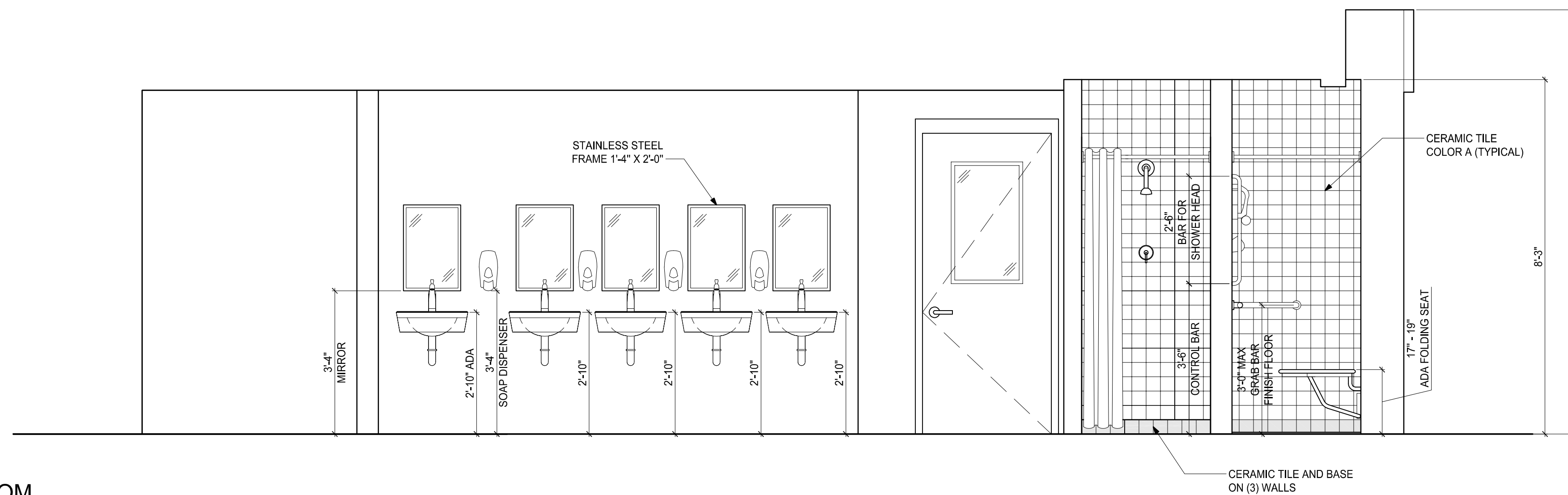
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Submission:

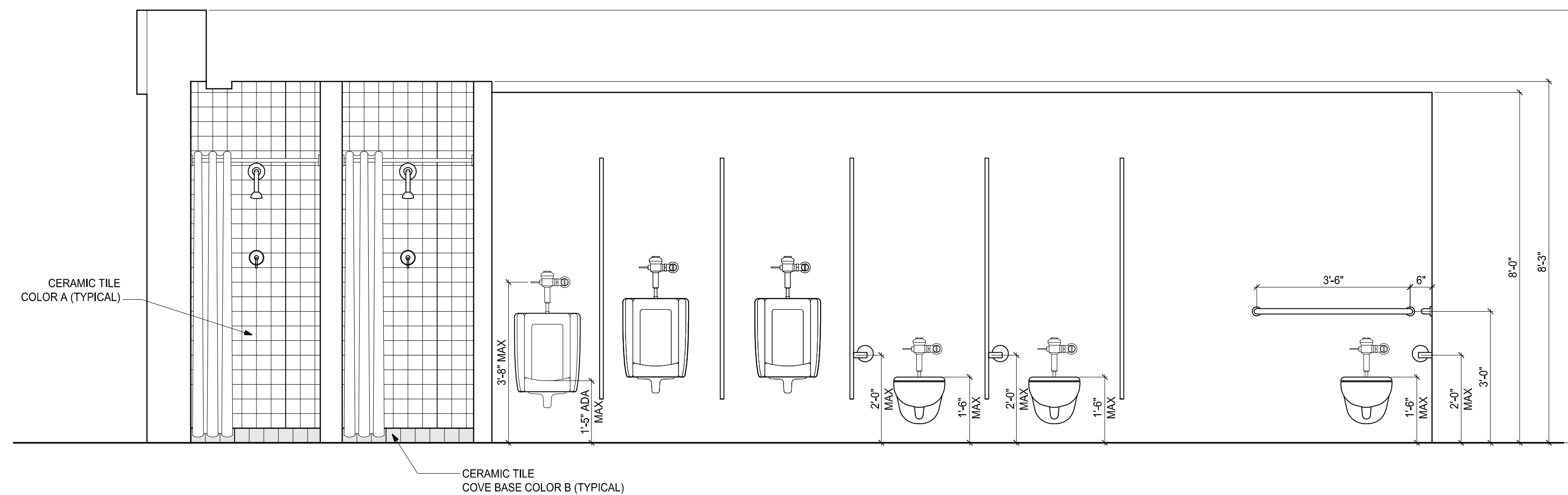
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Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: 1/2"=1'-0"

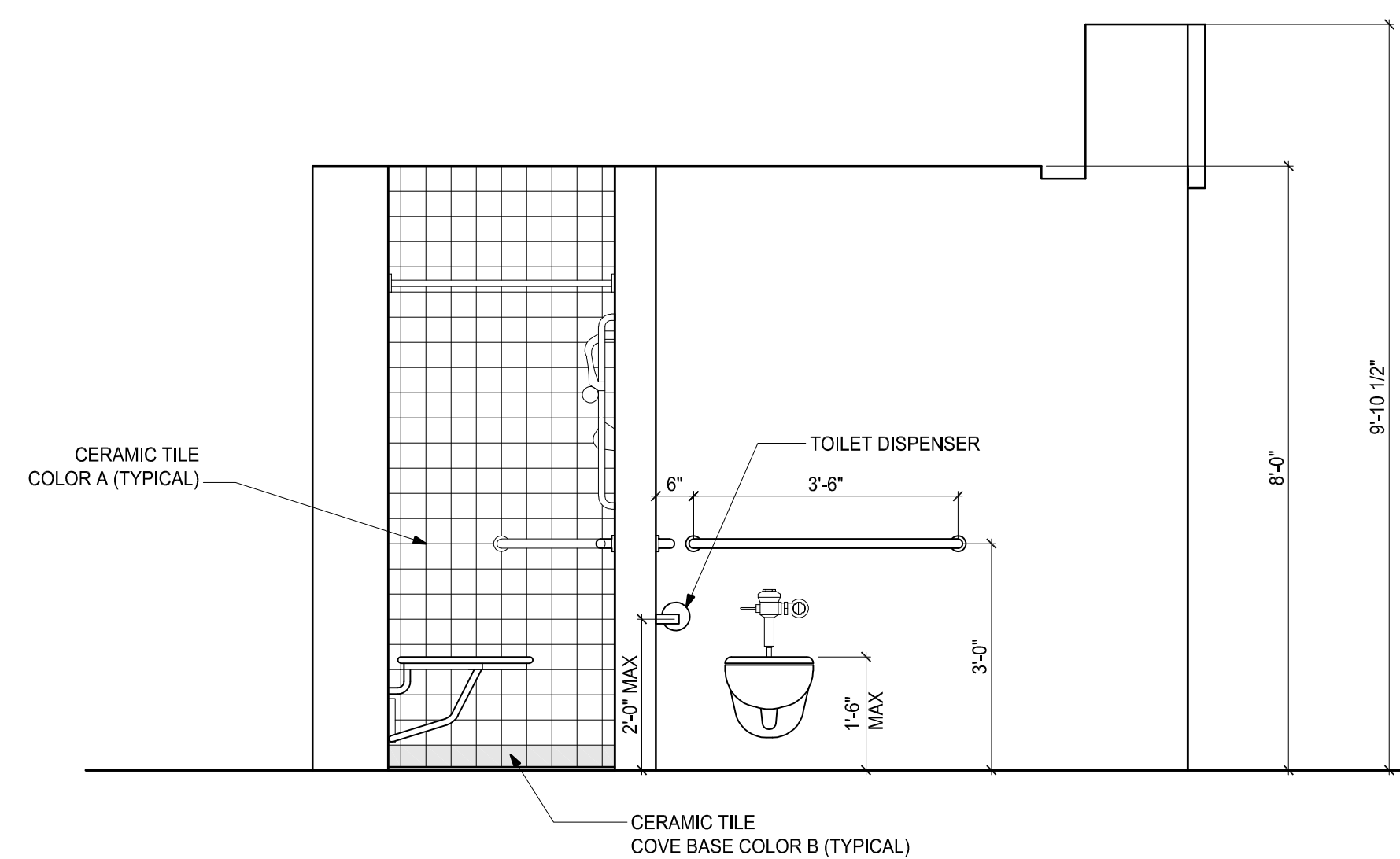
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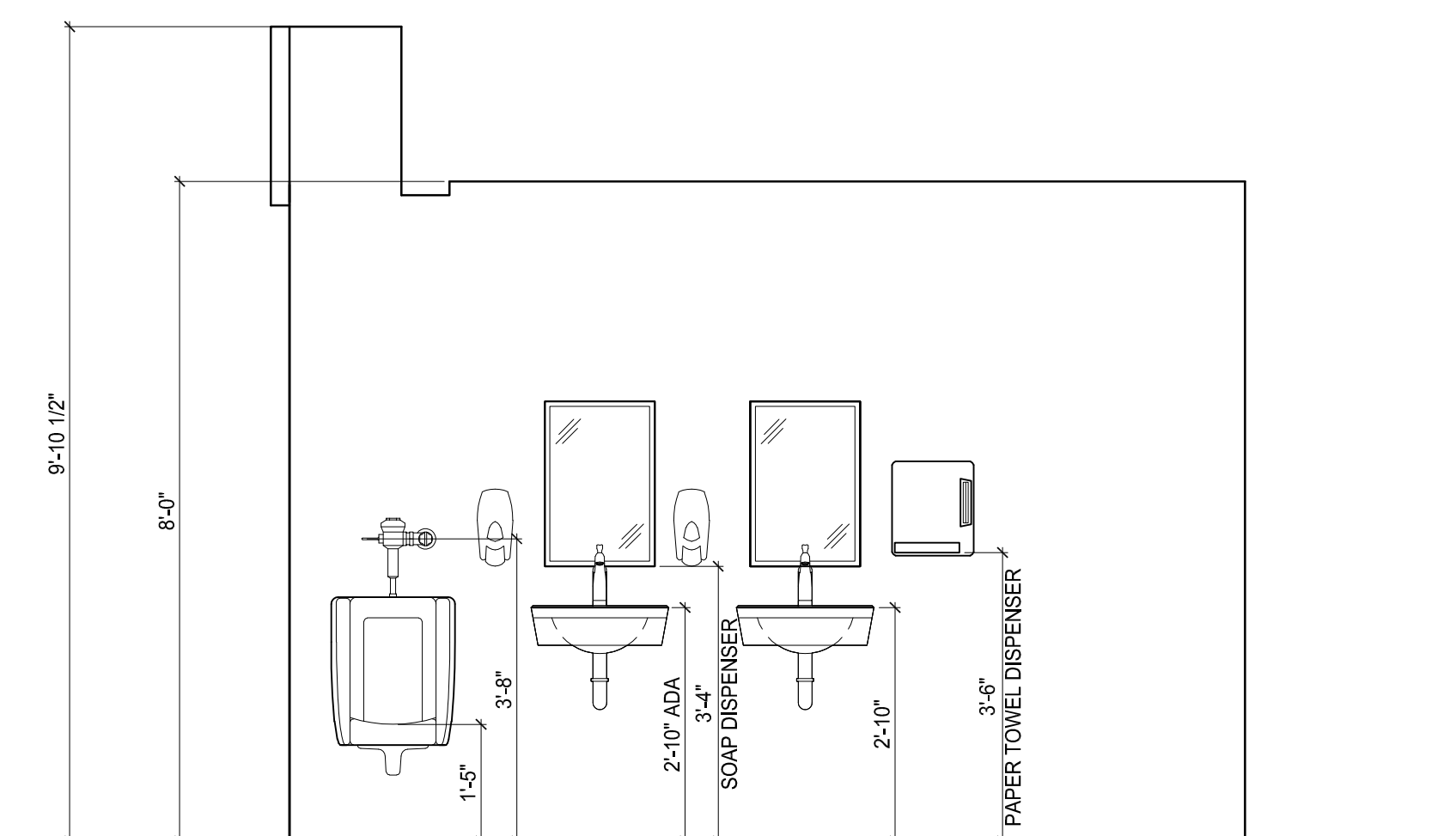
1 INTERIOR ELEVATION  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/2"=1'-0"



2 INTERIOR ELEVATION  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/2"=1'-0"



3 INTERIOR ELEVATION  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/2"=1'-0"

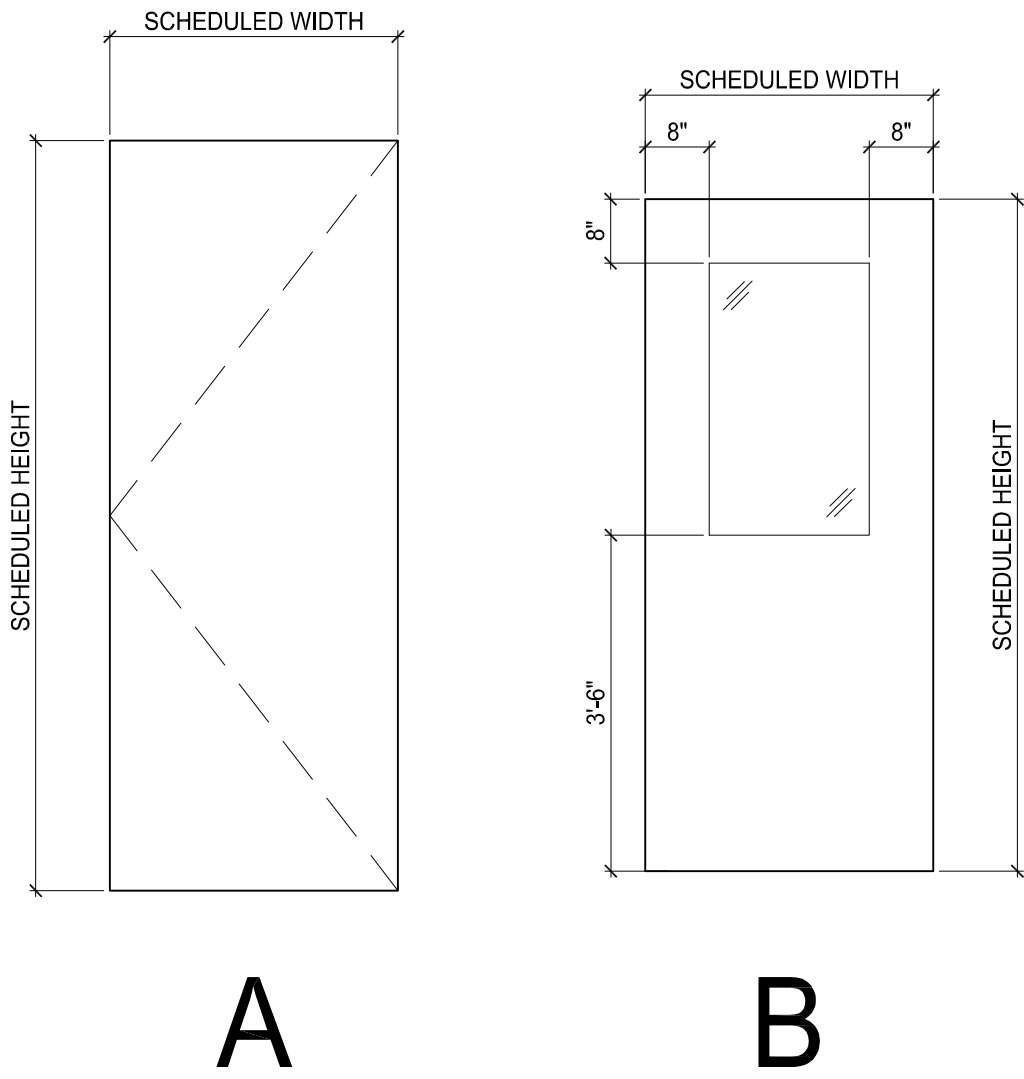


4 INTERIOR ELEVATION  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/2"=1'-0"

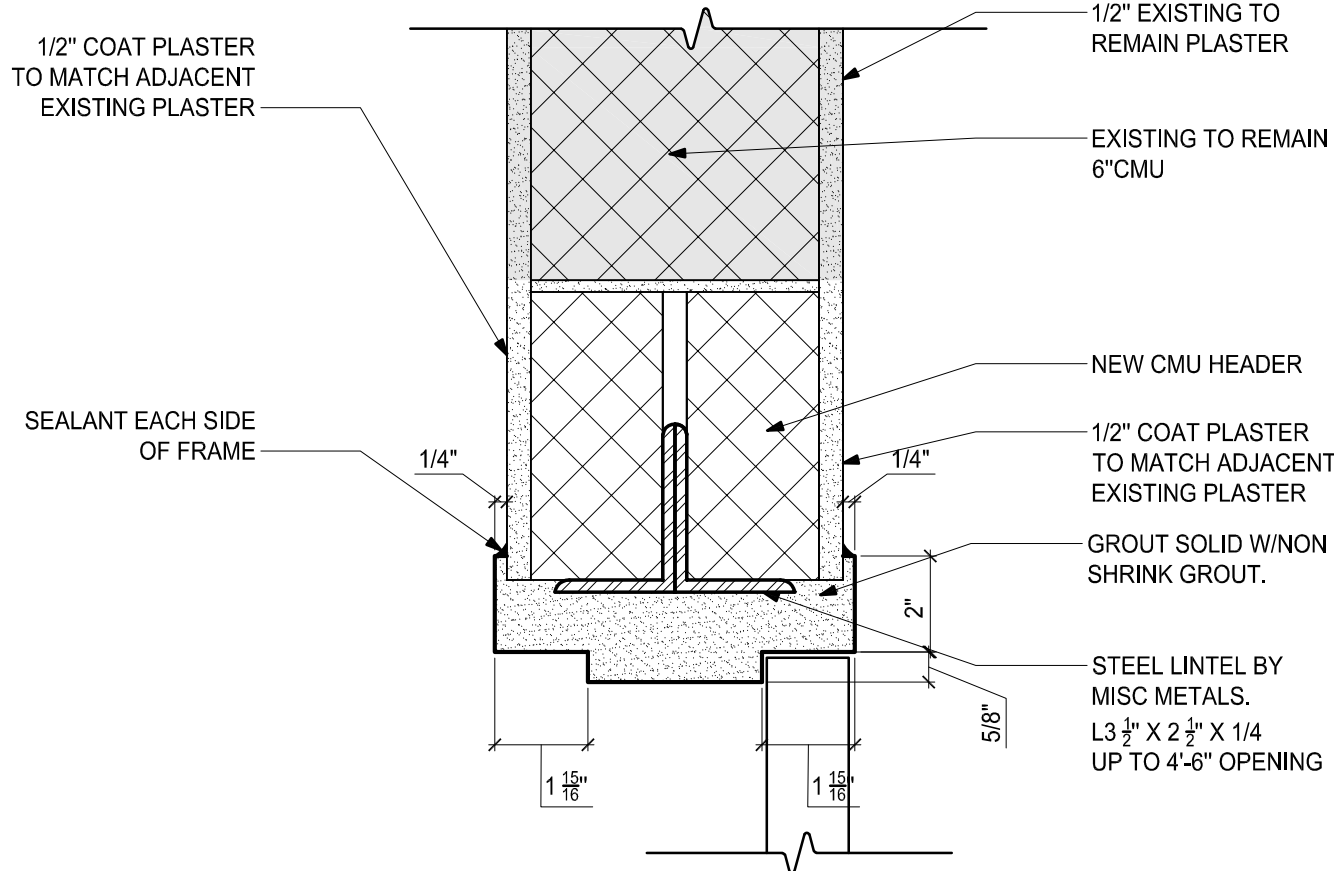


ROOM FINISH SCHEDULE								
ROOM NO.	ROOM NAME	FLOOR FINISH	BASE	WALL FINISHES				REMARKS
				EAST	NORTH	WEST	SOUTH	
01	LOCKER ROOM	EPOXY COATING ON CONCRETE FLOOR	4" HIGH EPOXY COATING	PAINTED CMU	PAINTED CMU	PAINTED CMU	PAINTED CMU	
02	TOILET ROOM	EPOXY COATING ON CONCRETE FLOOR	4" HIGH EPOXY COATING	PAINTED CMU / PAINTED GWB	PAINTED CMU	PAINTED CMU / PAINTED GWB	PAINTED CMU	
03	SHOWER ROOM	EPOXY COATING ON CONCRETE FLOOR	4" HIGH EPOXY COATING	CERAMIC TILE	PAINTED CMU / PAINTED GWB	CERAMIC TILE	PAINTED CMU	SHOWERS TO RECEIVE CERAMIC TILES ON (3) WALLS FULL HEIGHT, AND FLOOR
04	LOCKER ROOM	EPOXY COATING ON CONCRETE FLOOR	4" HIGH EPOXY COATING	PAINTED CMU	PAINTED CMU	PAINTED CMU	PAINTED CMU	
05	TOILET / SHOWER ROOM	EPOXY COATING ON CONCRETE FLOOR	4" HIGH EPOXY COATING	PAINTED CMU / PAINTED GWB	PAINTED CMU / PAINTED GWB	PAINTED CMU / PAINTED GWB	PAINTED CMU	SHOWERS TO RECEIVE CERAMIC TILES ON (3) WALLS FULL HEIGHT, AND FLOOR

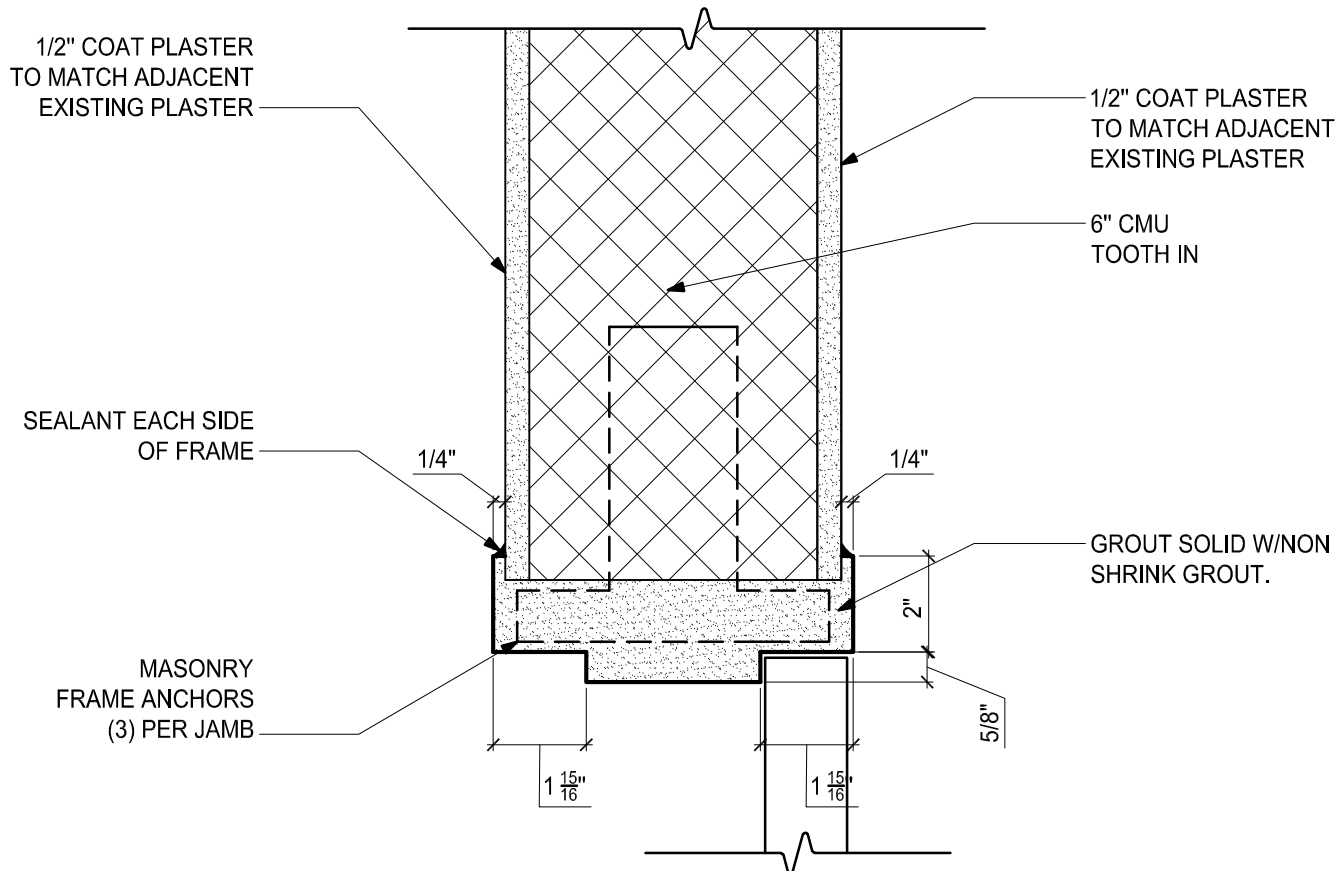
DOOR NO.	DOOR						FRAME					
	DOOR TYPE	MATERIAL	FINISH	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	HEAD DETAIL	JAMB DETAIL	SILL DETAIL	REMARKS
X01	A	HOLLOW METAL	PAINTED	2'-6"	7'-9 3/4"	1'-3/4"	1	HOLLOW METAL	-	-	-	PAINT EXISTING TO REMAIN DOOR AND FRAME
X02	A	HOLLOW METAL	PAINTED	3'-0"	7'-9 3/4"	1'-3/4"	1	HOLLOW METAL	-	-	-	PAINT EXISTING TO REMAIN DOOR AND FRAME
N01	B	WOOD	WOOD VENEER	3'-0"	7'-0"	1'-3/4"	2	HOLLOW METAL	3/A3-01	4/A3-01	-	NEW WOOD VENEER DOOR AND FRAME TO BE PAINTED
N02	A	HOLLOW METAL	PAINTED	3'-0"	7'-9 3/4"	1'-3/4"	1	HOLLOW METAL	1/A3-01	2/A3-01	-	NEW DOOR AND FRAME TO BE PAINTED
N03	B	WOOD	WOOD VENEER	3'-0"	7'-0"	1'-3/4"	2	HOLLOW METAL	3/A3-01	4/A3-01	-	NEW WOOD VENEER DOOR AND FRAME TO BE PAINTED



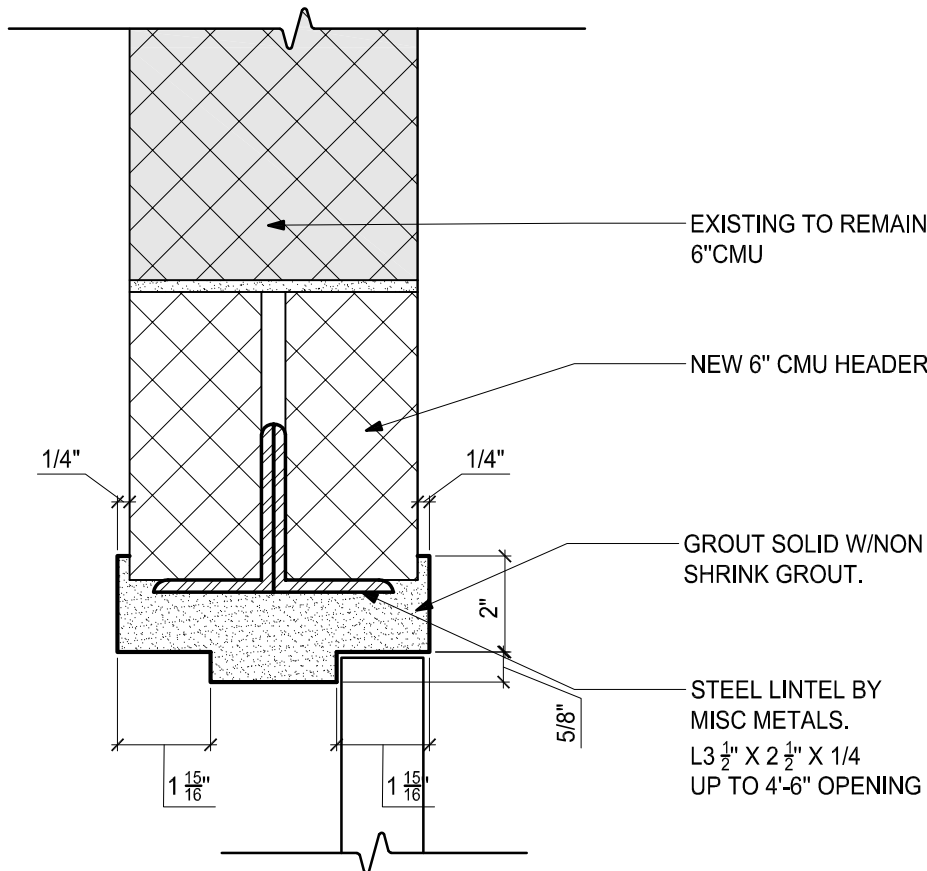
DOOR TYPES  
SCALE: 1/2"=1'-0"



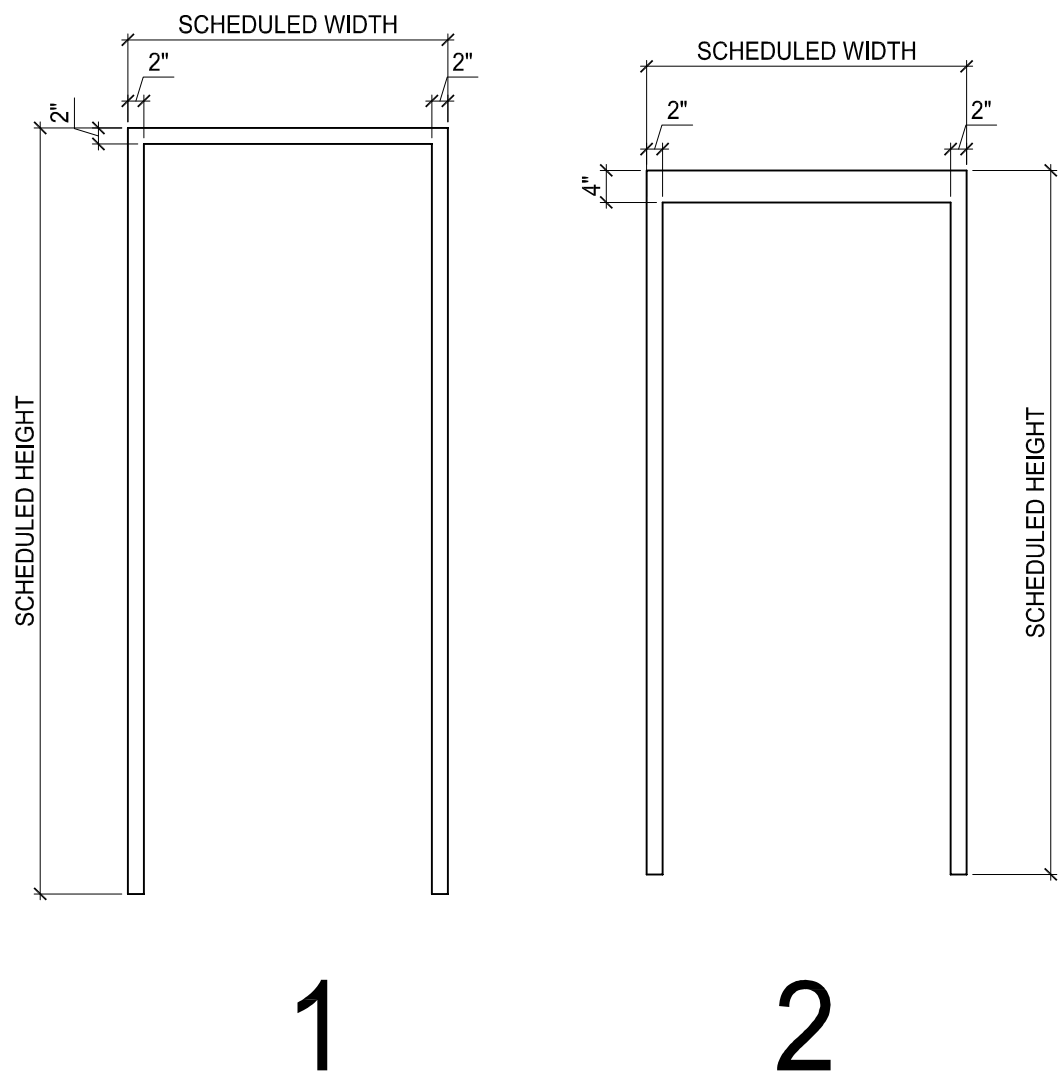
1 HEAD DETAIL  
SCALE: 3" = 1'-0"



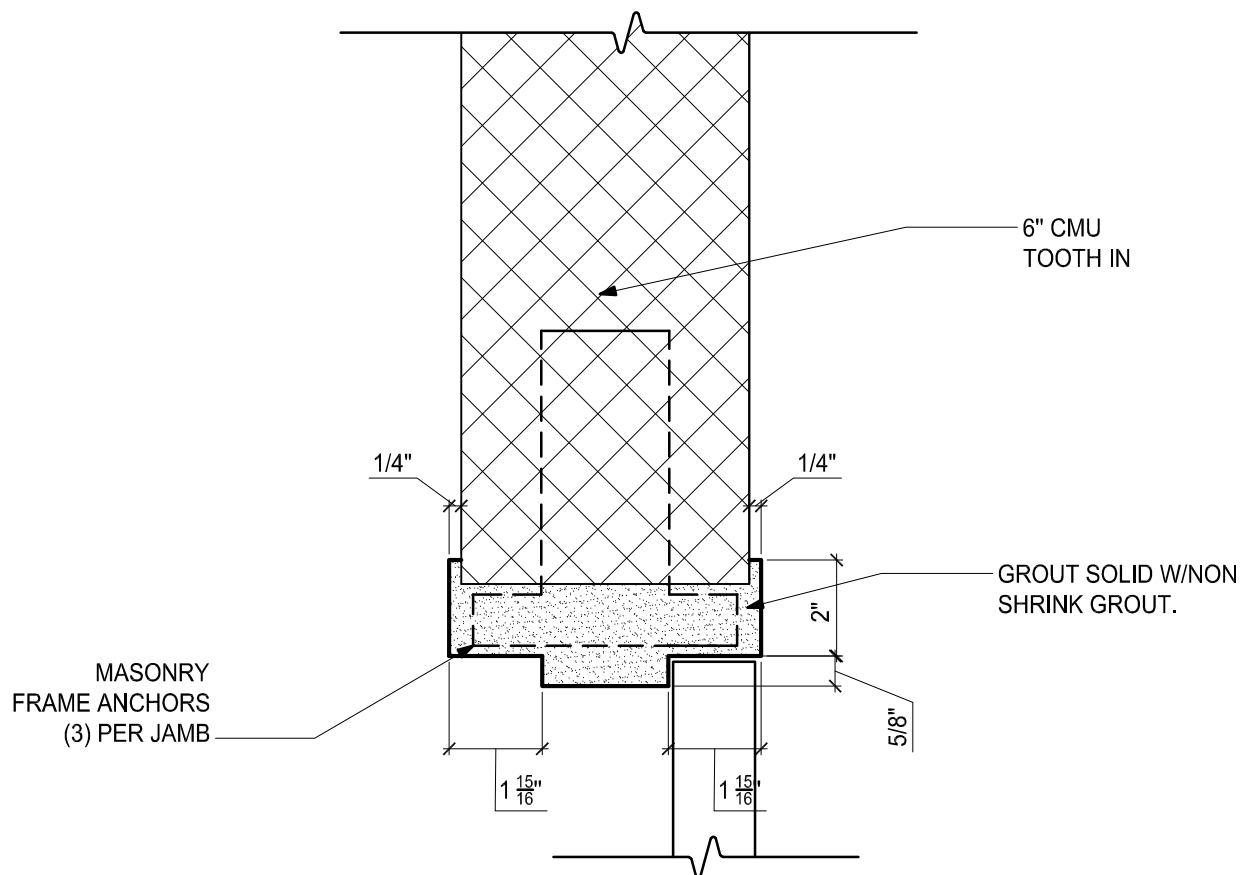
2 JAMB DETAIL  
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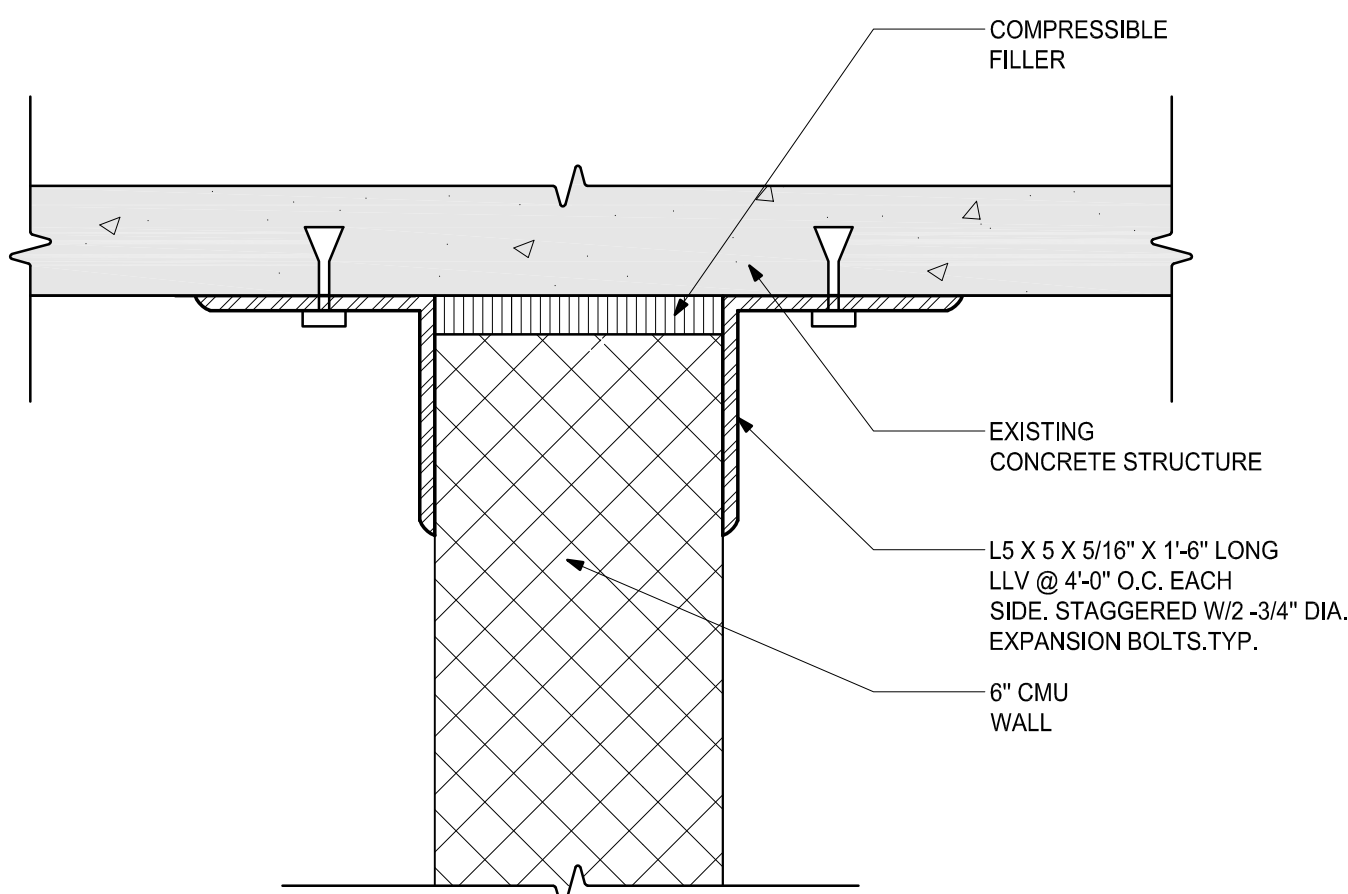
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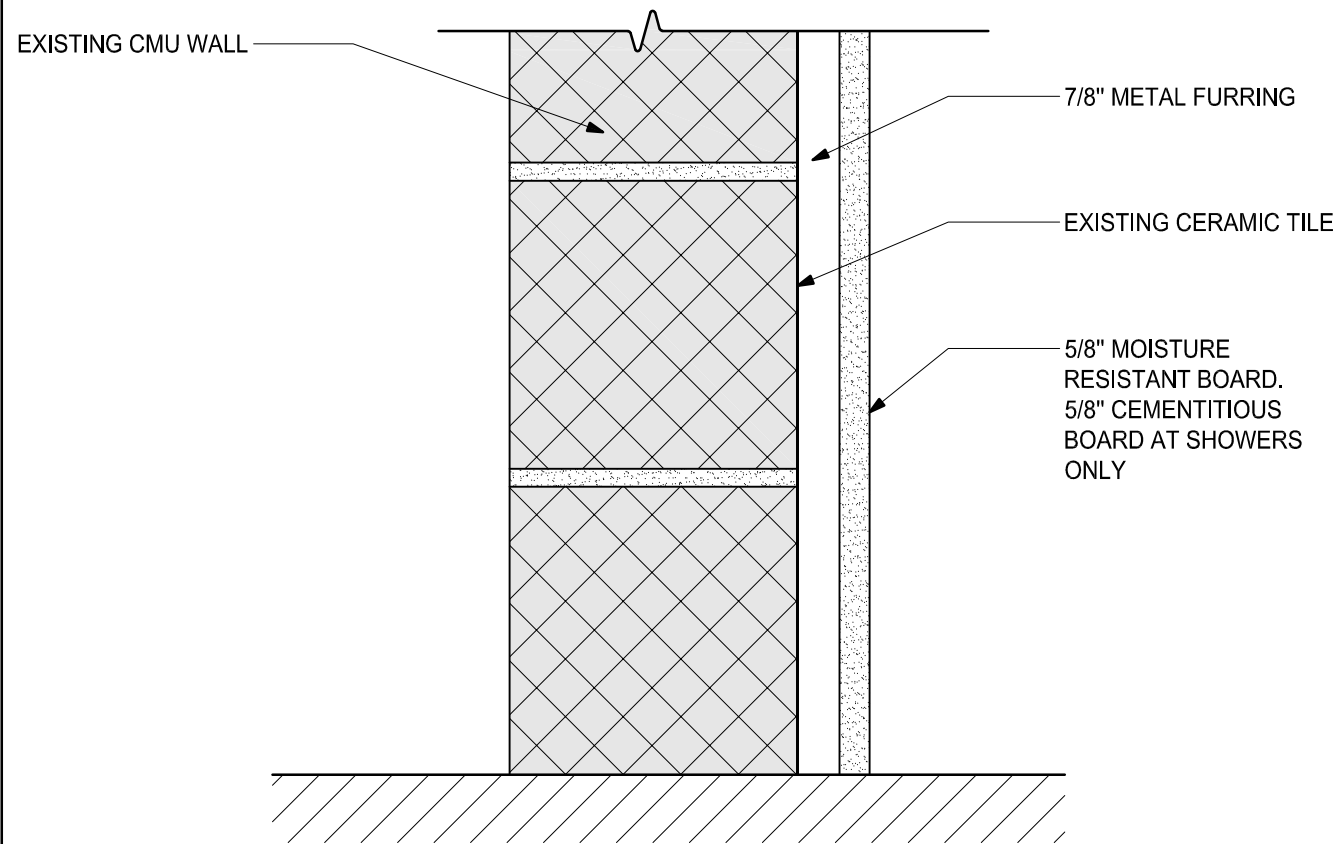
FRAME TYPES  
SCALE: 1/2"=1'-0"



4 JAMB DETAIL  
SCALE: 3" = 1'-0"



M5 PARTITION TYPE  
TYPICAL MASONRY ANCHORAGE DETAIL  
SCALE: 3" = 1'-0"



M6 EXISTING CMU FURRED OUT  
SCALE: 3" = 1'-0"



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POLICE  
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LOCKER ROOMS  
RENOVATIONS



CITY OF LOWELL

Drawing Title:

ROOM FINISH  
AND DOOR  
SCHEDULE

Revisions:

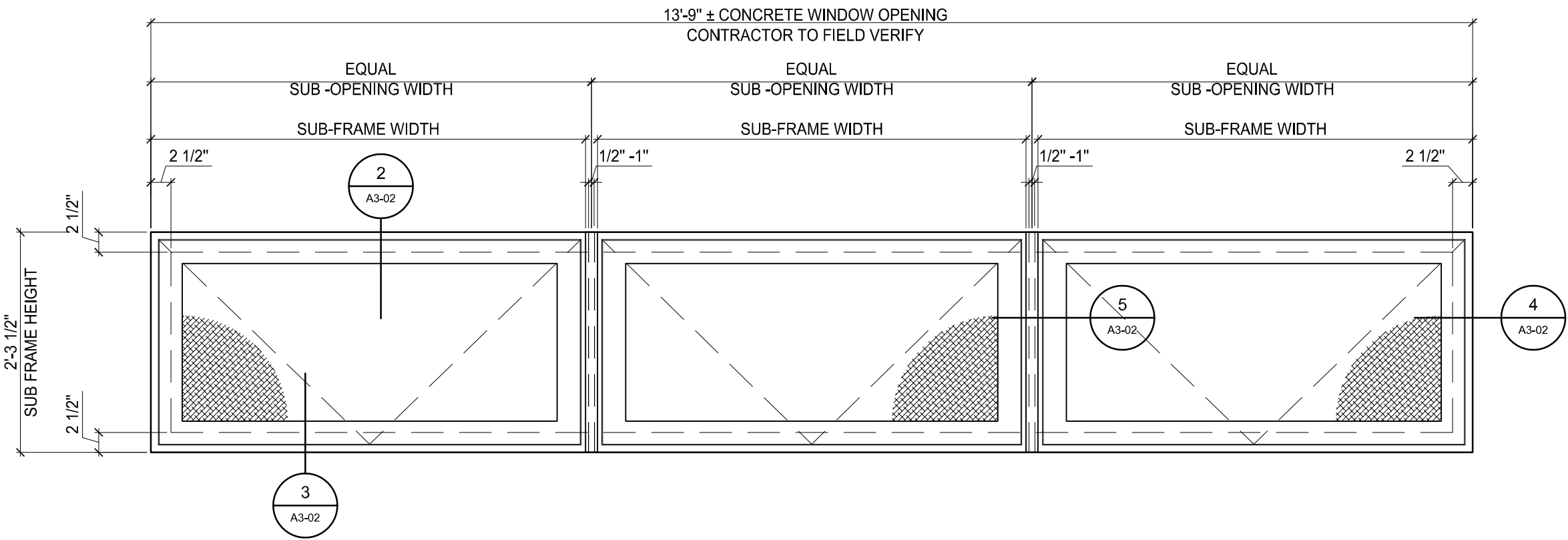
Submission:

BID  
DOCUMENTS

Date: 3/04/2020  
Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: AS NOTED

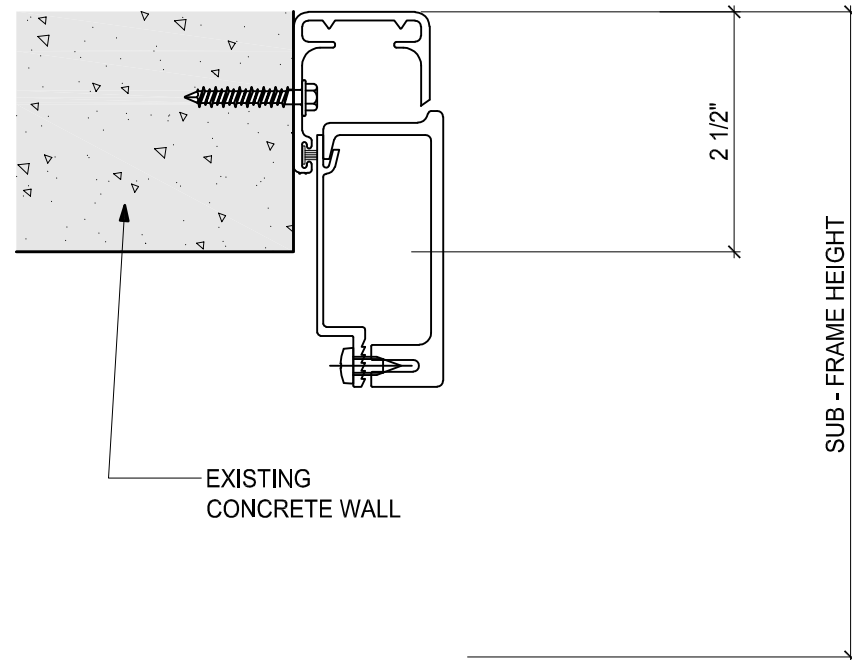
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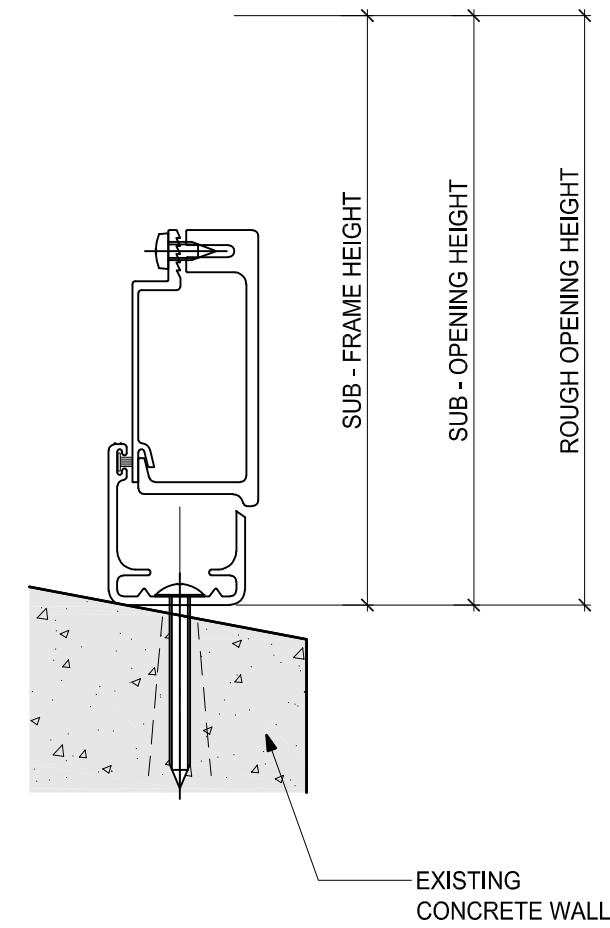
**TYPICAL ALUMINUM EXTERIOR  
CLERESTORY WINDOW SECURITY SCREEN  
QUANTITY 4**

SCALE: 3/4"=1'-0"



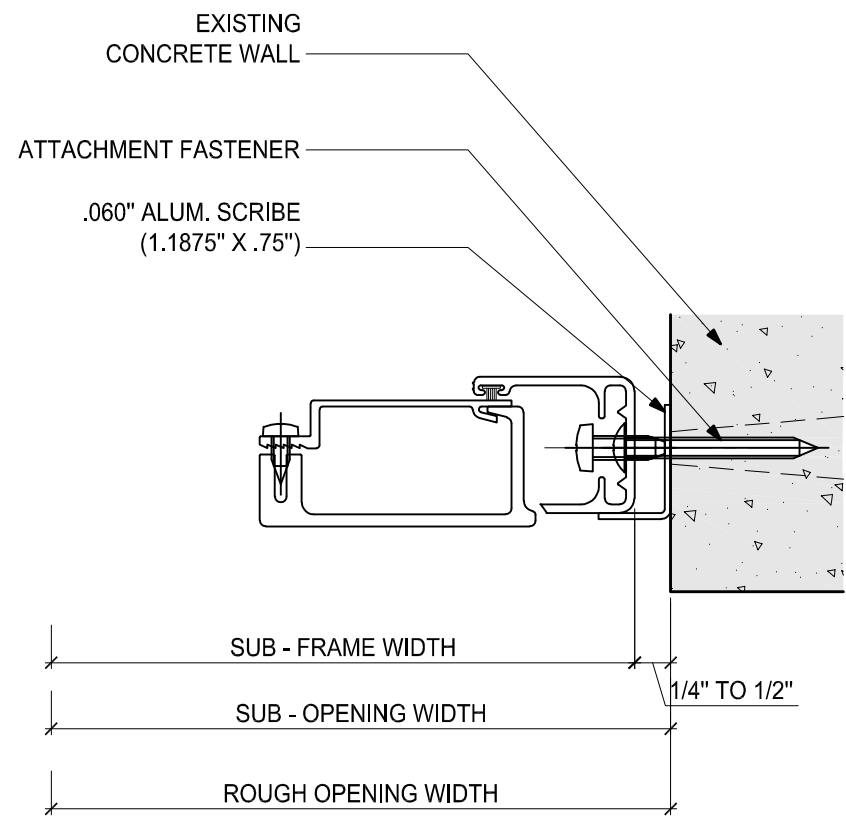
**HEAD DETAIL**

SCALE: 6"=1'-0"



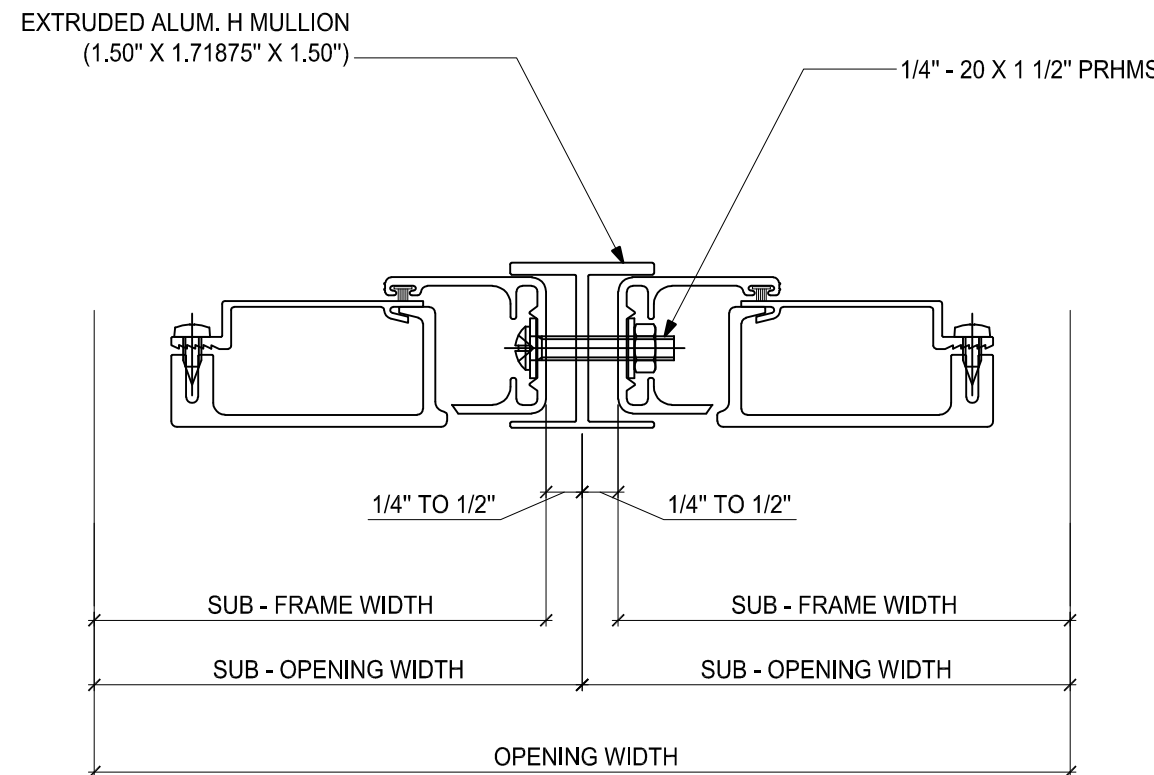
**SILL DETAIL**

SCALE: 6"=1'-0"



**RIGHT JAMB DETAIL**

SCALE: 6"=1'-0"



**MULLION DETAIL**

SCALE: 6"=1'-0"



**EXISTING CONDITION PHOTOGRAPH**

SCALE: N.T.S.

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**POLICE  
DEPARTMENT  
LOCKER ROOMS  
RENOVATIONS**



**CITY OF LOWELL**

Drawing Title:

**EXTERIOR  
CLERESTORY  
WINDOW SECURITY  
SCREEN**

Revisions:

Submission:

**BID  
DOCUMENTS**





Date: 3/04/2020  
Project Number: CB190850  
Project Manager: RTA  
Drawn By: BK  
Scale: AS NOTED

**A3-02**



GENERAL NOTES

- ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH THE MASSACHUSETTS STATE PLUMBING CODE.
- CAREFULLY COORDINATE LOCATION OF PIPING WITH ALL OTHER TRADES.
- ALL PIPING SHOWN DIAGRAMMATICALLY AND EXACT LOCATION SHALL BE DETERMINED IN THE FIELD.
- ALL PIPING SHALL BE RUN CONCEALED ABOVE CEILINGS, IN WALLS AND IN CHASES, UNLESS OTHERWISE NOTED.
- NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT THE APPROVAL OF THE STRUCTURE ENGINEER.
- ALL PIPING SHALL BE SUPPORTED FROM BUILDING STRUCTURE.
- THE TERM "PROVIDE" SHALL MEAN FURNISH AND INSTALL.
- RUN WATER PIPE ON THE WARM SIDE OF BUILDING INSULATION. NO WATER PIPING SHALL BE RUN ON EXTERIOR WALLS.
- PROVIDE DRAWOFFS WITH BALL VALVE, HOSE END VACUUM BREAKER, CAP & CHAIN AT ALL DOMESTIC WATER LOW POINTS AND PITCH PIPING TO DRAIN.
- ALL SANITARY WASTE PIPING SHALL PITCH A MIN OF 1/8" PER FT. FOR PIPING 4" & LARGER, AND 1/4" PER FT FOR PIPING UP TO 3".
- PROVIDE BALANCING VALVES ON THE HOT WATER RE-CIRCULATION SYSTEM, AS REQUIRED AND/OR AS SHOWN.
- PROVIDE SHOCK ABSORBERS ON ALL PIPING SUPPLYING FIXTURES EQUIPPED WITH A QUICK CLOSING VALVES.
- ALL PIPING SHALL BE NEW, INSTALLED PARALLEL TO BUILDING LINES AND PITCHED TO LOW POINTS.
- PLUMBING CONTRACTOR SHALL PROVIDE FIRESTOPPING FOR ALL PENETRATIONS THRU FIRE WALLS AND FIRE RATED SEPARATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR THESE AREAS.
- PLUMBING CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL SCAFFOLDING, HOISTING EQUIPMENT DERRICKS, ETC., NECESSARY FOR INSTALLATION OF WORK
- ALL PLUMBING PIPING AND DRAINS SHALL BE KEPT CLEAR OF BLOCKAGE WHILE CONSTRUCTION IS UNDERWAY. ALL PLUMBING PIPING SHALL BE DEBURRED BEFORE JOINTS ARE MADE
- THE PLUMBING CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING IN ORDER TO ACCOMMODATE THE PLUMBING WORK.
- WHERE PLUMBING DROPS ONLY ARE SHOWN TO FIXTURES OR GROUPS OF FIXTURES, THE PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS OF WATER, SANITARY AND VENT TO EACH FIXTURE. PLUMBING CONNECTIONS TO FIXTURES SHALL BE IN ACCORDANCE WITH THE PLUMBING FIXTURE SCHEDULE. PROVIDE SERVICE STOP AT EACH FIXTURE
- ALL ISOLATION VALVES INSTALLED IN WALLS OR ABOVE CEILINGS SHALL BE PROVIDED WITH ACCESS PANELS . WHERE REMOVABLE SUSPENDED CEILING TILES ARE USED, NO ACCESS PANELS ARE REQUIRED.
- ALL PIPING RISER PENETRATIONS THRU FLOORS SHALL BE SEALED WATER TIGHT.
- PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL ASPECTS OF THE WORK AND ALL CONDITIONS TO WHICH THE WORK WILL BE INSTALLED. ANY DISCREPANCY BETWEEN THE WORK SHOWN ON THE DRAWINGS AND ANY CONDITIONS, EXISTING OR PROPOSED, SHALL BE SUBMITTED TO THE DESIGN TEAM IN WRITING. FAILURE OF THE CONTRACTOR TO FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS AND THEIR RELATION TO THE NEW WORK AND FAILURE TO SUBMIT DISCREPANCIES IN WRITING TO THE DESIGN TEAM PRIOR TO THE COMMENCEMENT OF ANY PLUMBING WORK SHALL NOT BE ACCEPTED AS A CAUSE FOR ADDITIONAL CHARGE TO THE CONTRACT.
- CONTRACTOR SHALL COORDINATE ALL SHUT DOWNS OF EXISTING SYSTEMS WITH OWNER. ALL SHUT DOWNS SHALL BE PERFORMED AS REQUESTED BY OWNER. NO SHUT DOWNS SHALL BE PERFORMED DURING NORMAL BUSINESS UNLESS AUTHORIZED BY OWNER.

PLUMBING FIXTURE SCHEDULE														
TAG NO	FIXTURE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	SIZE	CW (in)	HW (in)	SAN (in)	V (in)	FLOW RATE	FAUCET	TRAP	SERVICE STOPS AND SUPPLIES	CARRIER	REMARKS
WC-1	WATER CLOSET ADA	ZURN OR APPROVED EQUAL	Z5615-BWL-AM OR APPROVED EQUAL		1"	N/A	4"	2"	1.28 GPF	ZURN ZTR6200EV-LL-1.28 FLUSH ADA	INTEGRAL	N/A	Z1201-N_4 CONCEALED BY ZURN OR APPROVED EQUAL	SEAT SHALL BE WHITE OPEN FRONT, HANDICAP ACCESSIBLE Z5955SS-AM-ST5 BY ZURN OR APPROVED EQUAL. 
WC-2	WATER CLOSET	ZURN OR APPROVED EQUAL	Z5615-BWL-AM OR APPROVED EQUAL		1"	N/A	4"	2"	1.28 GPF	ZURN ZTR6200EV-LL-1.28 FLUSH ADA	INTEGRAL	N/A	Z1201-N_4 CONCEALED BY ZURN OR APPROVED EQUAL	SEAT SHALL BE WHITE OPEN FRONT, Z5955SS-AM-ST5 BY ZURN OR APPROVED EQUAL.
UR-1	URINAL ADA	AMERICAN STANDARD OR APPROVED EQUAL	LYNBROOK	—	¾"	N/A	2"	2"	1.0 GPF	SLOAN SOLIS 8186	INTEGRAL	N/A	CONCEALED BY J.R.SMITH OR APPROVED EQUAL	WALL MOUNTED HANDICAP ACCESSIBLE HEIGHT 
UR-2	URINAL	AMERICAN STANDARD OR APPROVED EQUAL	LYNBROOK	—	¾"	N/A	2"	2"	1.0 GPF	SLOAN SOLIS 8186	INTEGRAL	N/A	CONCEALED BY J.R.SMITH OR APPROVED EQUAL	WALL MOUNTED
LAV-1	LAVATORY ADA	ZURN OR APPROVED EQUAL	Z5340 OR APPROVED EQUAL		½"	½"	2"	2"	0.5 GPM	ZURN Z6915-XL-F-N-TMW-1 WITH MIXING VALVE OR APPROVED EQUAL	1 ½" X 1 ½" 17GA CAST BRASS CHROME PLATED P-TRAP W/ CO PLUG, EQUAL TO MCQUIRE B8912 OR APPROVED EQUAL	½" COMPRESSION x ¾" O.D. CHROME PLATED LEAD FREE QUARTER-TURN, COMPRESSION STRAIGHT/ANGLE VALVE, CHROME PLATED COPPER RISER AND SHALLOW CHROME PLATED ESCUTCHEON EQUAL TO MCQUIRE LFBV09/R36;SE058	Z1231-(D) CONCEALED BY ZURN OR APPROVED EQUAL	WALL MOUNTED HANDICAP ACCESSIBLE HEIGHT 
LAV-2	LAVATORY	ZURN OR APPROVED EQUAL	Z5340 OR APPROVED EQUAL		½"	½"	2"	2"	0.5 GPM	ZURN Z6915-XL-F-N-TMW-1 WITH MIXING VALVE OR APPROVED EQUAL	1 ½" X 1 ½" 17GA CAST BRASS CHROME PLATED P-TRAP W/ CO PLUG, EQUAL TO MCQUIRE B8912 OR APPROVED EQUAL	½" COMPRESSION x ¾" O.D. CHROME PLATED LEAD FREE QUARTER-TURN, COMPRESSION STRAIGHT/ANGLE VALVE, CHROME PLATED COPPER RISER AND SHALLOW CHROME PLATED ESCUTCHEON EQUAL TO MCQUIRE LFBV09/R36;SE058	Z1231-(D) CONCEALED BY ZURN OR APPROVED EQUAL	WALL MOUNTED
SH-1	SHOWER (HANDICAP ACCESSIBLE)	AQUARIUS OR APPROVED EQUAL	G3636BFMA	—	½"	½"	2"	1½"	—	SYMMONS TEMPTROL C-96-500-B48-V-X-7 2-QD-CHKS-1.5	2"	N/A	N/A	SHOWER UNIT EQUIPED WITH GRAB BARS, FOLD-UP SEAT, SOAP DISH AND CURTAIN ROD; FAUCET TO HAVE CHROME FINISH 
SH-2	SHOWER	AQUARIUS OR APPROVED EQUAL	G3636SHMA	—	½"	½"	2"	1½"	—	SYMMONS TEMPTROL C-96-300-B48-V-X-7 2-QD-CHKS-1.5	2"	N/A	N/A	PROVIDE WITH OATEY 140 SERIES BRASS DRAIN.
HB-1	HOSE BIBB	MUELLER OR APPROVED EQUAL	102-333HC 888-137RP	—	½"	N/A	N/A	N/A	UNRESTRICTED	N/A	N/A	N/A	N/A	PROVIDE WITH VACUUM BREAKER 108-904

NOTES : PLUMBING FIXTURE SELECTION SHALL CONFORM TO OWNER'S STANDARDS. COORDINATE W/ ARCHITECT AND OWNER. ALL PLUMBING FIXTURES, FAUCETS, AND FLUSH VALVES SHALL BE FIELD ADJUSTED TO ENSURE PROPER AND CODE COMPLIANT OPERATION FOR TEMPERATURE AND FLOW. ALL LAV FAUCETS SHALL BE FIELD ADJUSTED TO LIMIT THE HOT WATER TEMPERATURE FROM THE FAUCET TO A MAXIMUM OF 110°F. PROVIDE SERVICE STOPS FOR ALL FIXTURES. ALL EXPOSED WATER AND WASTE PIPING ASSOCIATED WITH FIXTURES SHALL BE CHROME FINISH. PROVIDE ALL SUPPLIES, SERVICE STOPS, TAILPIECES AND TRAPS FOR FIXTURES AS REQUIRED. PROVIDE ALL FINAL CONNECTIONS. PROVIDE CONCEALED FIXTURE CARRIERS FOR ALL WALL MOUNTED PLUMBING FIXTURES. FIXTURE CARRIERS SHALL BE AS RECOMMENDED BY THE PLUMBING FIXTURE MANUFACTURERS AND SHALL BE BY WADE, SMITH OR ZURN

DRAIN SCHEDULE					
TAG NO	TYPE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	SIZE	REMARKS
FD-1	FLOOR DRAIN	ZURN OR APPROVED EQUAL	Z415SH-NH-Y OR APPROVED EQUAL	3"	PROVIDE TRAP PRIMER CONNECTION, AND SEDIMENT BUCKET
NOTES : COORDINATE FLASHING REQUIREMENTS WITH G.C. PROVIDE ALL FLOOR DRAINS WITH TRAP PRIMING SYSTEM.					

MATERIAL SPECIFICATION						
SERVICES		CAST IRON – HUB & SPOUT PIPE	CAST IRON – HUBLESS (NO-HUB) PIPE	COPPER DWV PIPE	WATER TUBE TYPE L COPPER PIPE	REMARKS
COLD WATER	ABOVE GROUND				■	W/ 1" FIBERGLASS INSULATION & IDENTIFICATION
	BELOW GROUND					
HOT WATER	ABOVE GROUND					
	BELOW GROUND					
SANITARY WASTE	ABOVE GROUND		■	■		
	BELOW GROUND	■				
SANITARY VENT	ABOVE GROUND			■		
	BELOW GROUND	■				
NATURAL GAS	ABOVE GROUND					CORROSION RESISTANT COATING & IDENTIFICATION

PLUMBING LEGEND & ABBREVIATIONS

	CW	COLD WATER ABOVE FLOOR		
	CW	COLD WATER BELOW FLOOR	AFF	ABOVE FINISHED FLOOR
	HW	HOT WATER ABOVE FLOOR	ARCH	ARCHITECT
	HW	HOT WATER BELOW FLOOR	CFH	CUBIC FEET PER HOUR
	HWR	HOT WATER RETURN ABOVE FLOOR	CLG	CEILING
	HWR	HOT WATER RETURN BELOW FLOOR	CO	CLEANOUT
	140°F HW	140°F HOT WATER	CONN	CONNECTION
	140°F HWR	140°F HOT WATER RETURN	CONT	CONTINUATION
	SAN OR W	SANITARY WASTE ABOVE FLOOR	CTE	CONNECT TO EXISTING
	SAN OR W	SANITARY WASTE BELOW FLOOR	DWG	DRAWING
	IW	INDIRECT WASTE	EC	ELECTRICAL CONTRACTOR
	V	VENT ABOVE FLOOR	ELEC	ELECTRICAL
	V	VENT BELOW FLOOR	ETBR	EXISTING TO BE REMOVED
	G	NATURAL GAS LINE ABOVE FLOOR	ETR	EXISTING TO REMAIN
	TP	TRAP PRIMER SUPPLY ABOVE FLOOR	FCO	FLOOR CLEANOUT
	TP	TRAP PRIMER SUPPLY BELOW FLOOR	FD	FLOOR DRAIN
	EX	EXISTING PIPING	FFE	FINISHED FLOOR ELEVATION
	ETBR	EXISTING TO BE REMOVED	FT	FOOT/FEET
	FCO	FLOOR CLEANOUT	GC	GENERAL CONTRACTOR
	GCO	GRADE CLEANOUT	GPF	GALLON PER FLUSH
	CO	CLEANOUT	GPM	GALLON PER MINUTE
	WCO	WALL CLEANOUT - PROVIDE ACCESS PANEL	HB	HOSE BIBB
		CAPPED PIPE	INV. EL	INVERT ELEVATION
		UNION	LAV.	LAVATORY
		FLOW ARROW	LPC	LIMIT OF PLUMBING CONTRACT
		DIRECTION OF SLOPE	MIN	MINIMUM
		PIPE BREAK	MAX	MAXIMUM
		PIPE SLEEVE	NIC	NOT IN CONTRACT
		BALL VALVE	NTS	NOT TO SCALE
	TMV	THERMOSTATIC MIXING VALVE	OED	OPEN-END DRAIN
		BALANCING VALVE	PC	PLUMBING CONTRACTOR
		CHECK VALVE	RD	ROOF DRAIN
	SA / WHA	SHOCK ABSORBER, WATER HAMMER ARRESTOR	SI	SOLIDS INTERCEPTOR
		TRAP PRIMER VALVE	SH	SHOWER
		ELBOW UP OR RISE	TP	TRAP PRIMER
		ELBOW DOWN OR DROP	TYP	TYPICAL
		TEE DROP	UR	URINAL
		OPEN-END DRAIN, P-TRAP	VTR	VENT THRU ROOF
	HB	HOSE BIBB	WC	WATER CLOSET
	CTE	CONNECT TO EXISTING PIPING	WH	WALL HYDRANT
		REMOVE TO EXISTING PIPING		
	FD	FLOOR DRAIN		
		AREA OF DEMOLITION		
		KEYNOTE DESIGNATION / DRAWING KEYNOTE		
	HC	HANDICAPPED ACCESSIBLE		

WATER HAMMER SCHEDULE			
TAG NO	FIXTURE UNIT RATING	MANUFACTURER	MODEL
WHA-"A"	1-11	J.R. SMITH	5005
WHA-"B"	12-32	J.R. SMITH	5010
WHA-"C"	33-60	J.R. SMITH	5020
WHA-"D"	61-113	J.R. SMITH	5030
WHA-"E"	114-154	J.R. SMITH	5040
WHA-"F"	155-330	J.R. SMITH	5050
NOTES : WATER HAMMER ARRESTORS SHALL BE BY PRECISION, J.R. SMITH, WATTS, SIOUX CHIEF OR APPROVED EQUAL.			

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CITY OF LOWELL

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Drawing Title:

PLUMBING  
LEGEND, NOTE,  
SYMBOLS LIST &  
SCHEDULES

Revisions:

Submission:

BID DOCUMENTS

Date:03/04/20

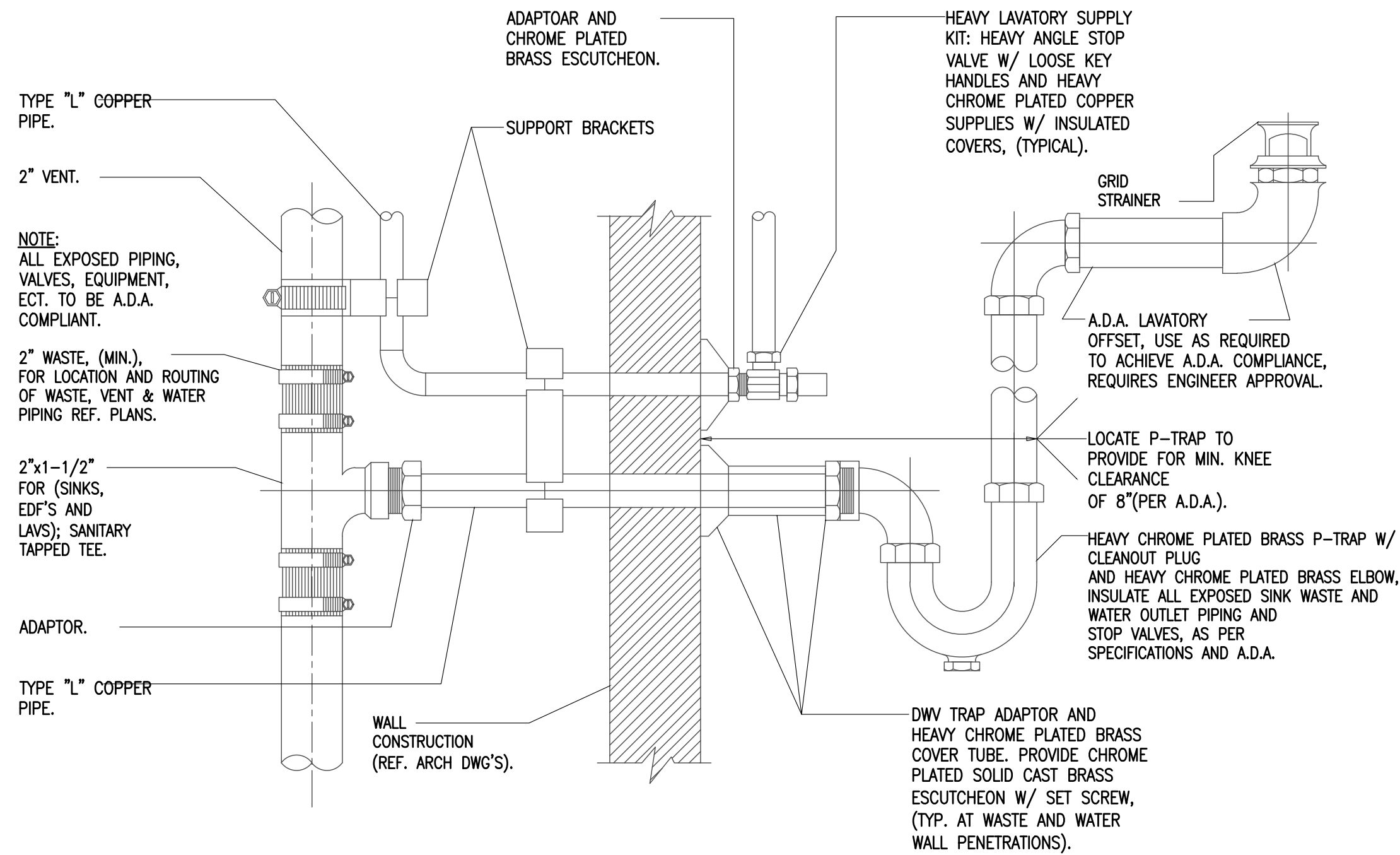
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Project Manager:KB

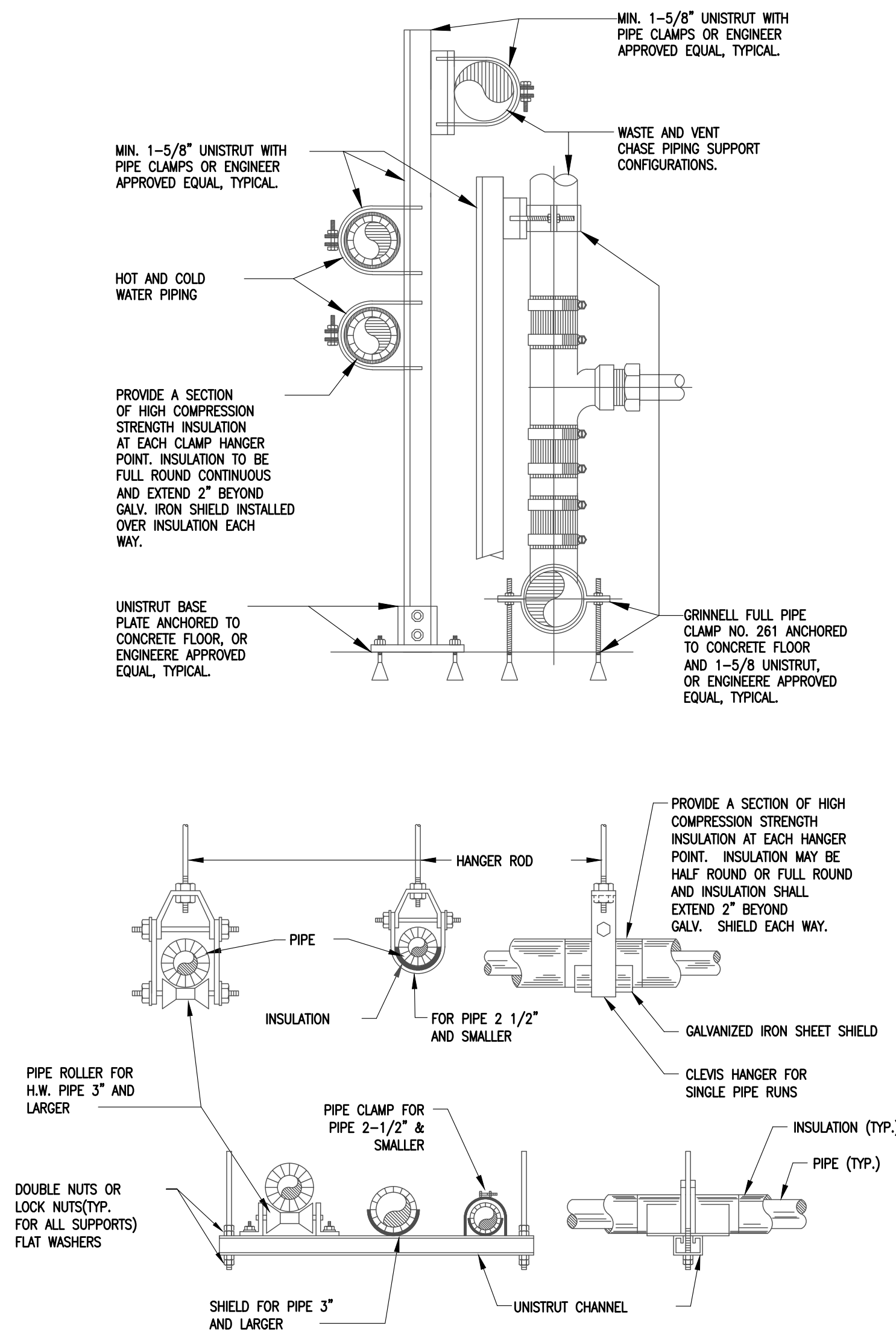
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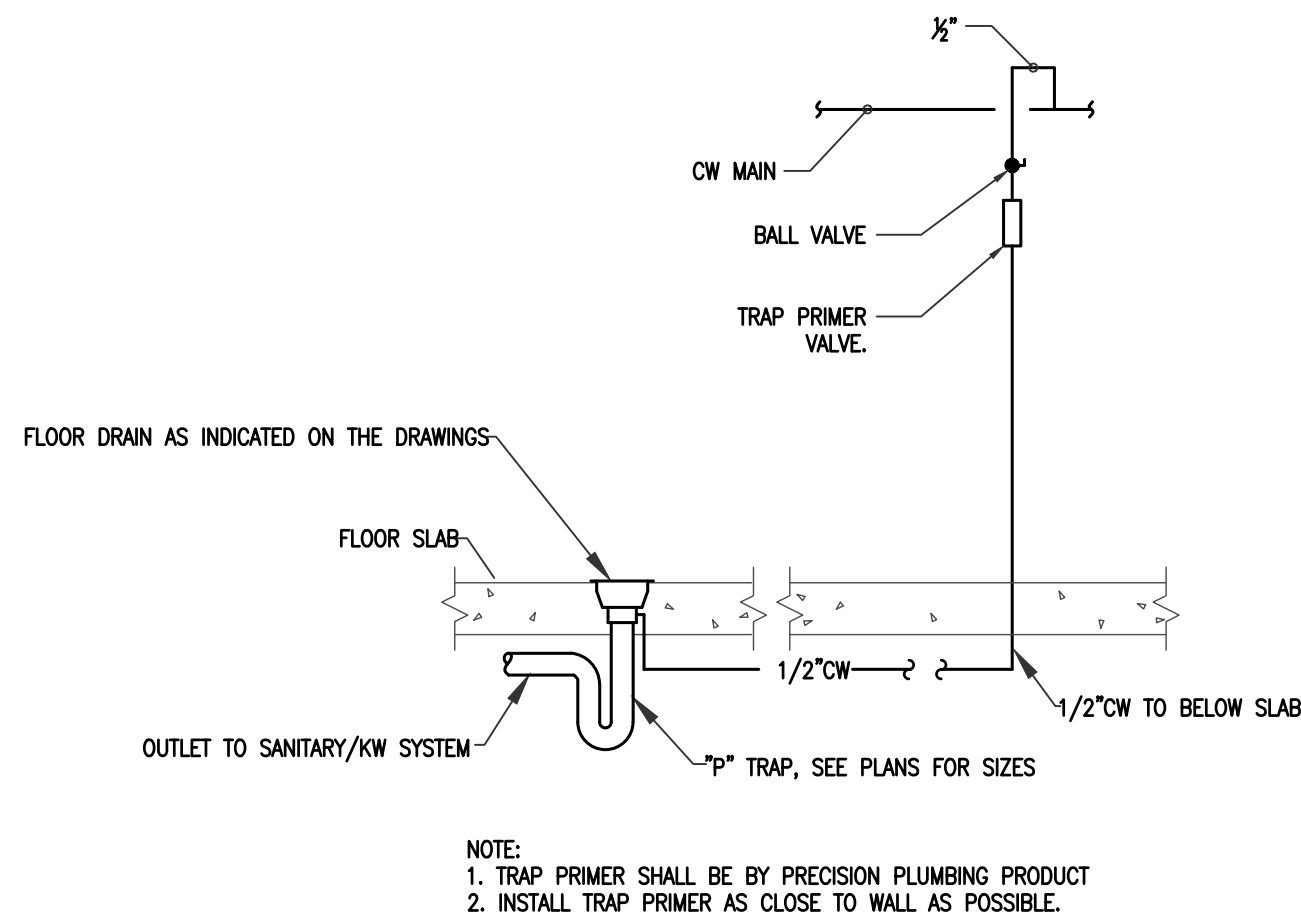




1 TYPICAL LAVATORY & SINK CONNECTION DETAIL  
NOT TO SCALE



2 TYPICAL PIPING HANGERS AND SUPPORTS DETAIL  
NOT TO SCALE



3 TYPICAL TRAP PRIMER AT FLOOR DRAIN  
NOT TO SCALE

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CITY OF LOWELL

50 ARCAND DRIVE  
LOWELL, MA 01852

Drawing Title:

PLUMBING  
DETAILS & RISER  
DIAGRAMS

Revisions:

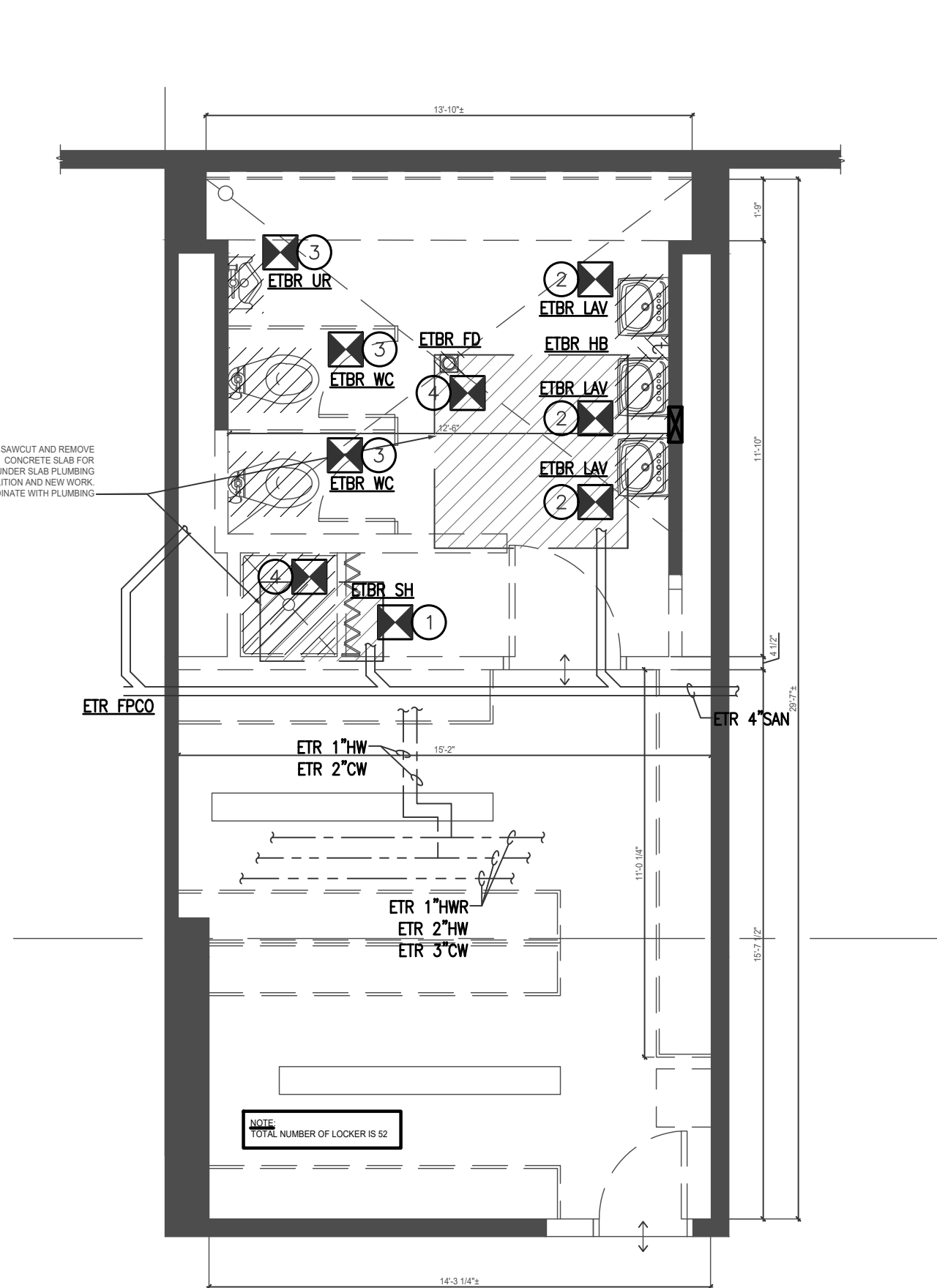
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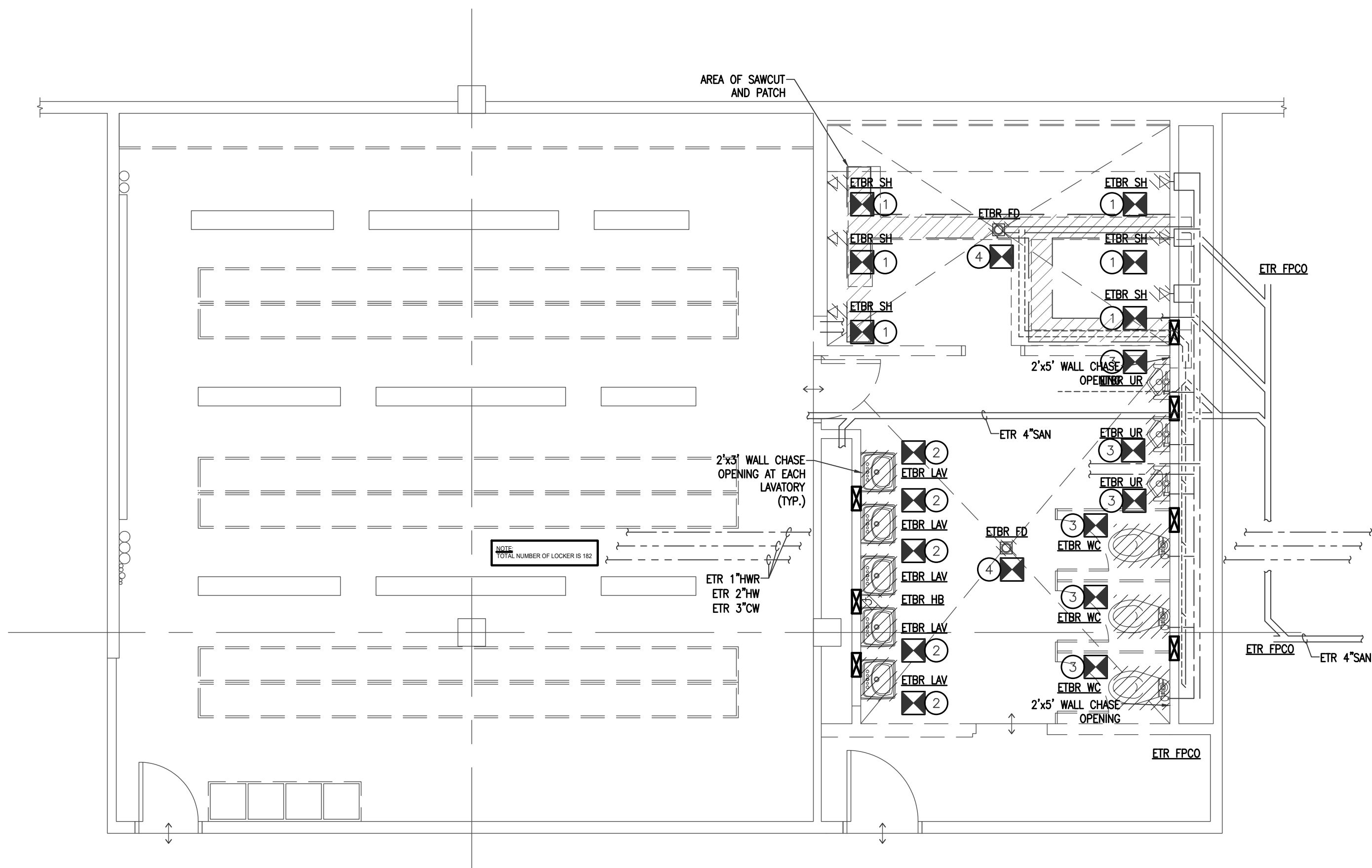
Date: 03/04/20  
Project Number: BLW17263  
Project Manager: KB  
Drawn By: GGB  
Scale: AS NOTED

P0-02





1 PLUMBING -  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"



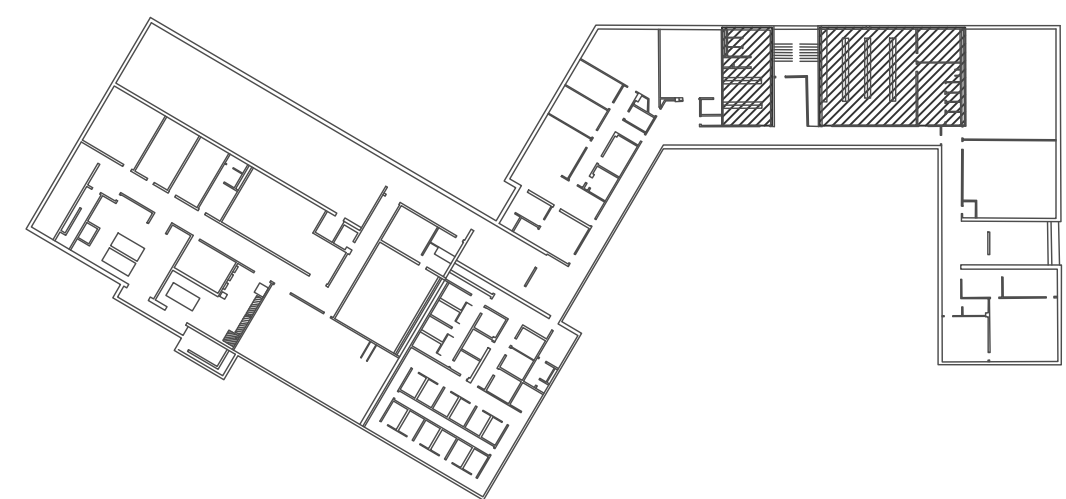
2 PLUMBING  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

1. PLUMBING CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING ELEMENTS OF CONSTRUCTION PRIOR TO COMMENCING DEMOLITION WORK. ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF BUILDING CODE, AND HEALTH REGULATIONS AND BE PERFORMED IN SUCH A MANNER AS TO ENSURE HUMAN SAFETY.
2. ALL ITEMS TO BE RE-USED SHALL BE CAREFULLY REMOVED FREE OF DAMAGE AND STORED IN A SECURE LOCATION.
3. ALL EXISTING PLUMBING PIPING TO BE REMOVED SHALL BE CAPPED AT POINT NEAREST ACTIVE MAIN, OR AT POINT OF ORIGIN.
4. ALL DEMOLITION SHALL BE PERFORMED IN SUCH A MANNER AS TO MINIMIZE DAMAGE TO CONSTRUCTION THAT IS TO REMAIN.
5. PLUMBING CONTRACTOR SHALL COORDINATE WITH BUILDING MANAGER/OWNER ON SHUTDOWN TIME WHEN WORKING ON EXISTING SYSTEMS.
6. REMOVAL OF EXISTING PLUMBING FIXTURES/EQUIPMENT SHALL INCLUDE, BUT NOT LIMITED TO, UTILITY PIPING, FITTINGS, ACCESSORIES AND SUPPORT. REMOVAL, WHERE NECESSARY, SHALL BE COORDINATED WITH OTHER TRADES.
7. ALL WORK RELATED TO DEMOLITION SHALL BE CAREFULLY COORDINATED WITH OWNER, DESIGN TEAM, AND OTHER TRADES.

KEYED DEMOLITION NOTES: (#)

1. DISCONNECT AND REMOVE EXISTING SHOWER VALVES, PIPING AND FLOOR DRAIN BACK TO THE CLOSEST ACTIVE MAINS AND CAP WATERTIGHT.
2. DISCONNECT AND REMOVE SINKS AND FAUCETS WITH ALL ASSOCIATED PIPING, VALVES AND SUPPORTS BACK TO THE CLOSEST ACTIVE MAINS AND CAP. REMOVE HOSE BIBBS.
3. PROVIDE REMOVAL OF THE EXISTING URINALS AND WATER CLOSETS WITH ASSOCIATED CARRIERS, PIPING, VALVES AND ACCESSORIES TO THE CLOSEST ACTIVE MAINS AND CAP WATERTIGHT.
4. SAWCUT EXISTING 6" CONCRETE SLAB TO ACCOMMODATE THE REMOVAL OF THE EXISTING SHOWER AND FLOOR DRAINAGE AND REFER TO NEW WORK PLANS FOR THE LOCATION OF THE NEW PLUMBING FIXTURE UNDERGROUND ROUGH-IN.



KEY PLAN

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**POLICE  
DEPARTMENT  
LOCKER ROOM  
RENOVATIONS**

**CITY OF LOWELL**

50 ARCAD DRIVE  
LOWELL, MA 01852

Drawing Title:

**PLUMBING  
DEMOLITION  
PLANS**

Revisions:

Submission:

**BID DOCUMENTS**

Date: 03/04/20  
Project Number: BLW17263  
Project Manager: KB  
Drawn By: GGB  
Scale: AS NOTED

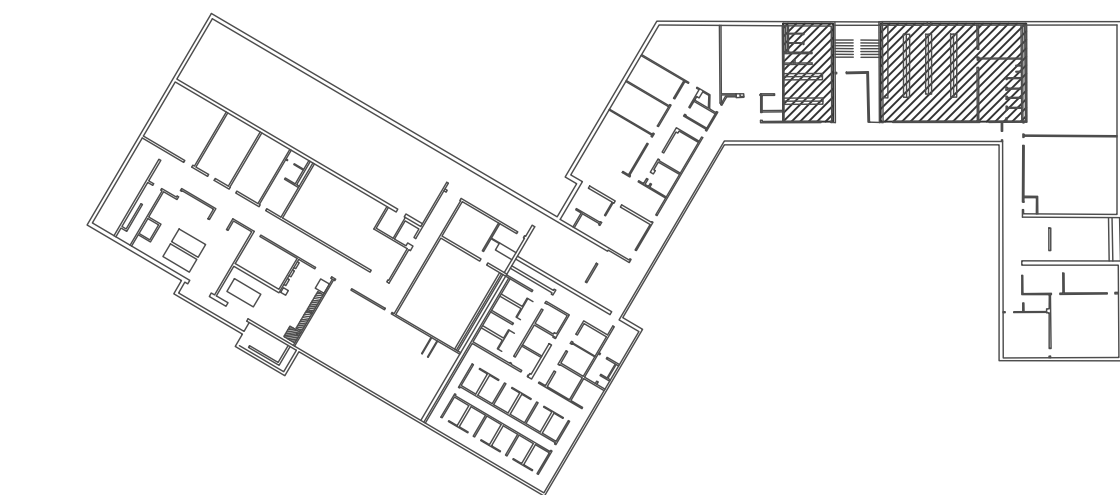
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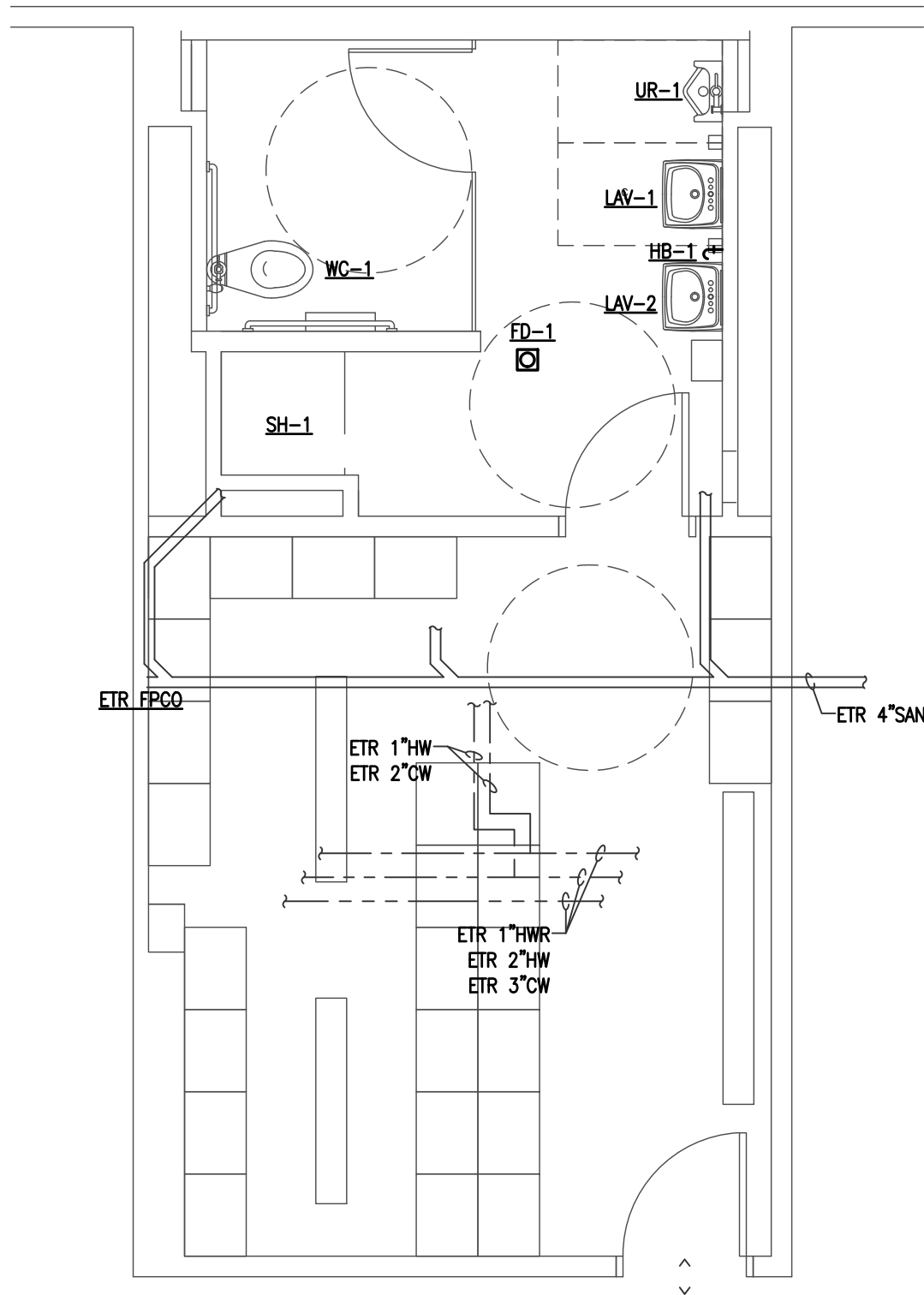
- DRAWING NOTES:
1. MAINTAIN THE INTEGRITY OF ALL EQUIPMENT AND SYSTEMS LOCATED OUTSIDE THE WORK AREA. PROVIDE ALL ADDITIONAL PIPING, FITTINGS, ACCESSORIES, ETC. REQUIRED TO EXTEND AND CONNECT ALL EQUIPMENT IN ORDER TO PROVIDE COMPLETE AND OPERATIONAL PLUMBING SYSTEMS.
  2. SCHEDULE SYSTEMS SHUTDOWNS WITH OWNER. SYSTEM SHUTDOWNS SHALL NOT INTERFERE WITH BUILDINGS OPERATIONS. PROVIDE TEMPORARY SYSTEMS DURING SHUTDOWNS IF REQUIRED.
  3. VERIFY ALL INVERTS, PIPING ROUTES PRIOR TO INSTALLATION. PROVIDE ALL NECESSARY OFFSETS AND FITTINGS REQUIRED TO MAKE SYSTEMS OPERATIONAL.
  4. ALL PIPING IS DIAGRAMMATIC, EXACT LOCATION TO BE DETERMINED IN THE FIELD.
  5. WHERE THE INSTALLATION WOULD AFFECT THE STRUCTURAL INTEGRITY OF THE BUILDING, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH THE INSTALLATION.
  6. THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF GOVERNING BODIES AND AUTHORITIES HAVING JURISDICTION REGARDING THE INSTALLATION OF ALL PLUMBING SYSTEMS.
  7. COORDINATE MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES WITH THE ARCHITECTURAL DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS.
  8. COORDINATE LOCATION ALL PLUMBING PIPING WITH THE OTHER TRADES. PROVIDE ALL NECESSARY OFFSETS TO PREVENT CONFLICTS WITH OTHER TRADES.
  9. PROVIDE ACCESS PANELS FOR ALL INACCESSIBLE PLUMBING EQUIPMENT REQUIRING REGULAR MAINTENANCE OR OPERATION. FURNISH ACCESS PANELS IN ADEQUATE SIZE AND COORDINATE LOCATIONS WITH THE GENERAL CONTRACTOR.
  10. ROUGH-IN ALL WATER AND GAS PIPING TO EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  11. INSTALL APPROVED DIELECTRIC ISOLATORS AT ALL DISSIMILAR METAL CONNECTIONS.
  12. PROVIDE INDIVIDUAL ISOLATION VALVES TO EACH PLUMBING FIXTURE. ENSURE ALL VALVES ARE PROPERLY TAGGED AND RECORDED IN A CHART.
  13. PROVIDE ALL SLEEVES, CORE DRILLING, WATER, SMOKE AND FIRE SEALING OF PIPING PENETRATIONS THROUGH WALLS AND FLOORS.
  14. THE PLUMBING CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF PLUMBING DRAWINGS, AND ACCURATELY MARK AND RECORD THE PLUMBING SYSTEM INSTALLATION LAYOUT. AFTER THE JOB COMPLETION ALL PLANS SHALL BE SUBMITTED AS AN "AS-BUILTS" TO THE OWNER.

KEYED NOTES: #

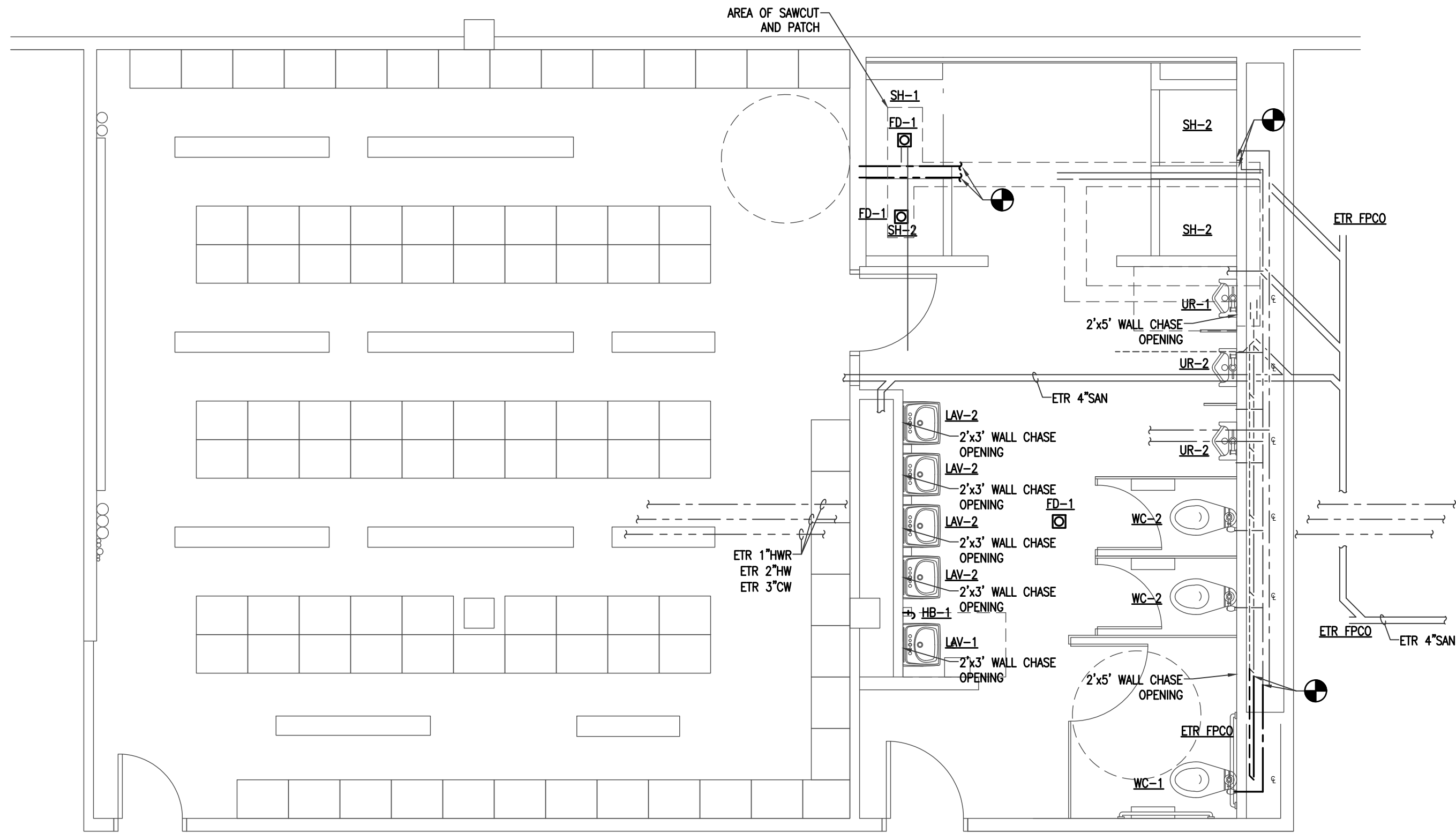
1. -.



KEY PLAN



1 PLUMBING -  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"



2 PLUMBING  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"

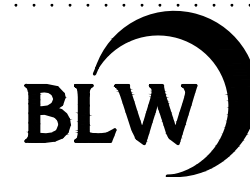


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Drawing Title:

PLUMBING  
NEW WORK  
PLANS

Revisions:

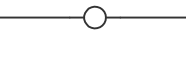
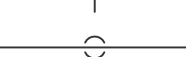






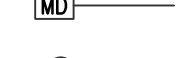


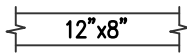
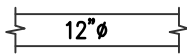
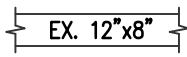
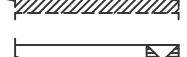




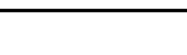





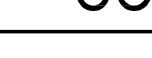


Submission:

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Project Number: BLW17263  
Project Manager: KB  
Drawn By: GGB  
Scale: AS NOTED

P2-01



PIPING LEGEND			DUCTWORK LEGEND			ABBREVIATIONS			GENERAL NOTES			DEMOLITION NOTES		
<div><div>— RS — RS</div><div>— RL — RL</div><div>— RHG — RHG</div><div>— D — D</div><div>— MUW — MUW</div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>REFRIGERANT SUCTION</div> <div>REFRIGERANT LIQUID</div> <div>REFRIGERANT HOT GAS</div> <div>A.C. CONDENSATE DRAIN</div> <div>MAKE UP WATER</div> <div>PIPE OFF BOTTOM</div> <div>PIPE OFF TOP</div> <div>RUN-OUT OFF TOP</div> <div>RUN-OUT OFF BOTTOM</div> <div>BRANCH CONNECTION (DIRECTION TO BE FIELD DETERMINED)</div> <div>PIPE UP</div> <div>PIPE DOWN</div> <div>STUB UP TO TERMINAL</div> <div>DIRECTION OF FLOW</div> <div>PIPE BREAK</div> <div>DRAIN PIPE PITCH AND FLOW</div>	<div><div> 12"x8"</div><div> 12"Ø</div><div> EX. 12"x8"</div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>RECTANGULAR DUCTWORK —FIRST DIMENSION IS SIDE SHOWN (IN.)</div> <div>ROUND DUCTWORK —DIMENSION IS DUCT DIAMETER (IN.)</div> <div>EXISTING DUCTWORK</div> <div>EXISTING DUCTWORK TO BE REMOVED</div> <div>RECTANGULAR SUPPLY DUCTWORK UP</div> <div>RECTANGULAR SUPPLY DUCTWORK DOWN</div> <div>CAPPED DUCTWORK</div> <div>RECTANGULAR TRANSITION</div> <div>MITERED ELBOW WITH TURNING VANES</div>	<div><div>AFF</div><div>ARCH.</div><div>ATC</div><div>BOD</div><div>BTU</div><div>BTUH</div><div>C</div><div>CAP</div><div>CFM</div><div>CONN.</div><div>CONTR</div><div>CV</div><div>DB</div><div>DIA.</div><div>DN</div><div>DR</div><div>DWG</div><div>EA</div><div>EA</div><div>EAT</div><div>EC</div><div>EF</div><div>ESP</div><div>ETBR</div><div>ETR</div><div>EX</div><div>EXH</div><div>FA</div><div>FAI</div><div>FLA</div><div>FLD</div><div>FPM</div><div>FT</div><div>GAL</div><div>GC</div><div>GE</div><div>GPM</div><div>HP</div><div>HVAC</div><div>IN</div><div>ID</div><div>KW</div></div> <div>ABOVE FINISHED FLOOR</div> <div>ARCHITECT</div> <div>AUTOMATIC TEMPERATURE CONTROL</div> <div>BOTTOM OF DUCT</div> <div>BRITISH THERMAL UNIT</div> <div>BRITISH THERMAL UNIT PER HOUR</div> <div>CLOSED</div> <div>CAPACITY</div> <div>CUBIC FEET PER MINUTE</div> <div>CONNECT</div> <div>CONTRACTOR</div> <div>CONTROL VALVE</div> <div>DRY BULB TEMPERATURE (°F)</div> <div>DIAMETER</div> <div>DOWN</div> <div>DRAIN</div> <div>DRAWING</div> <div>EACH</div> <div>EXHAUST AIR</div> <div>ENTERING AIR TEMPERATURE</div> <div>ELECTRICAL CONTRACTOR</div> <div>EXHAUST FAN</div> <div>EXTERNAL STATIC PRESSURE</div> <div>EXISTING TO BE REMOVED</div> <div>EXISTING TO REMAIN</div> <div>EXISTING</div> <div>EXHAUST</div> <div>FREE AREA</div> <div>FRESH AIR INTAKE</div> <div>FULL LOAD AMPS</div> <div>FLOOR DRAIN</div> <div>FEET PER MINUTE</div> <div>FEET</div> <div>GALLONS</div> <div>GENERAL CONTRACTOR</div> <div>GENERAL EXHAUST</div> <div>GALLONS PER MINUTE</div> <div>HORSE POWER</div> <div>HEATING, VENTILATION &amp; AIR CONDITIONING</div> <div>INCHES</div> <div>INSIDE DIAMETER</div> <div>KILOWATTS</div> <div><div>LAT</div><div>MBH</div><div>NC</div><div>NO</div><div>NTS</div><div>OA</div><div>OAT</div><div>OBD</div><div>OD</div><div>OED</div><div>PD</div><div>PSI</div><div>SA</div><div>SAT</div><div>SF</div><div>SP</div><div>TSTAT</div><div>TYP</div><div>WB</div><div>WMS</div></div> <div>LEAVING AIR TEMPERATURE</div> <div>THOUSANDS OF BTUH</div> <div>NORMALLY CLOSED</div> <div>NORMALLY OPEN</div> <div>NOT TO SCALE</div> <div>OUTSIDE AIR</div> <div>OUTSIDE AIR TEMPERATURE</div> <div>OPPOSED BLADE DAMPER</div> <div>OUTSIDE DIAMETER</div> <div>OPEN END DUCT</div> <div>PRESSURE DROP</div> <div>POUNDS PER SQUARE INCH</div> <div>SUPPLY AIR</div> <div>SUPPLY AIR TEMPERATURE</div> <div>SQUARE FEET</div> <div>STATIC PRESSURE</div> <div>THERMOSTAT</div> <div>TYPICAL</div> <div>WET BULB TEMPERATURE (°F)</div> <div>WIRE MESH SCREEN</div>	<div>1. MECHANICAL WORK INDICATED IS DIAGRAMMATIC. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD (SPACING SUBJECT TO ENGINEER'S REVIEW AND APPROVAL) TO AVOID CONFLICT WITH OTHER TRADES AND EXISTING SITE CONDITIONS.</div> <div>2. THE CONTRACTOR SHALL VISIT AND CAREFULLY EXAMINE THE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE WORK OF THIS SECTION. REPORT IN WRITING TO THE ENGINEER CONDITIONS WHICH MIGHT ADVERSELY AFFECT WORK. NO EXTRA PAYMENT WILL BE PROVIDED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY AN EXPERIENCED OBSERVER.</div> <div>3. WORK REQUIRING INTERRUPTION OF BUILDING SERVICES SHALL BE CAREFULLY REVIEWED AND COORDINATED WITH THE OWNER TO MINIMIZE FREQUENCY AND DURATION OF SERVICE INTERRUPTIONS.</div> <div>4. ALL INSTALLATIONS SHALL PERMIT AND PROVIDE ACCESSIBILITY FOR SERVICE AND REPLACEMENT OF ALL NEW EQUIPMENT AND EXISTING EQUIPMENT IMPACTED BY THIS WORK.</div> <div>5. ALL MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNING LOCAL, STATE, AND FEDERAL SEISMIC CODES. PARTICULAR ATTENTION SHALL BE MADE TO VIBRATION ISOLATION, ANCHORING, AND BALANCING REQUIREMENTS.</div> <div>6. ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH CODES AND STANDARDS SET FORTH IN NFPA, SMACNA, AND ASHRAE FOR MEDIUM AND LOW PRESSURE DUCTWORK SYSTEMS.</div> <div>7. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH DUCTS FOR AIR BALANCING.</div> <div>8. ALL SHEET METAL PLENUMS AT OUTSIDE AIR LOUVERS SHALL BE INSULATED WITH RIGID INSULATION, AS PER SPECIFICATION.</div> <div>9. RUN-OUTS TO RETURN AND EXHAUST REGISTERS, OR GRILLES ABOVE GYP BOARD CEILINGS, SHALL BE RIGID DUCTED. NO FLEXIBLE DUCT WORK SHALL BE ALLOWED ON RETURN OR EXHAUST REGISTERS.</div> <div>10. ALL DUCTS, PIPES, AND EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE WITH PROPER ALLOWANCES FOR CONTRACTION, EXPANSION, AND VIBRATION ELIMINATION.</div> <div>11. ROOM THERMOSTATS SHALL BE MOUNTED 4'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE SHOWN OR DIRECTED.</div> <div>12. ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR FREE AREA REQUIRED.</div> <div>13. ALL PIPING IS TO BE SLOPED A MINIMUM OF 1/4" PER HUNDRED FEET IN THE DIRECTION OF DRAINAGE.</div> <div>14. NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED ON THIS PROJECT.</div> <div>15. COORDINATE ENTIRE INSTALLATION WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATIONS.</div> <div>16. OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES RELATED TO SAME.</div> <div>17. ALL PIPING AND DUCTWORK SHOWN IS DIAGRAMMATIC ONLY. DETERMINE THE EXACT LOCATION IN THE FIELD.</div> <div>18. REVIEW ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, ELECTRICAL, FIRE PROTECTION AND SITE DRAWINGS BEFORE STARTING ANY WORK TO BECOME FAMILIAR WITH THE DETAILS OF CONSTRUCTION, AND COORDINATE WITH OTHER TRADES.</div> <div>19. PROVIDE ALL NECESSARY PIPING, EQUIPMENT AND SUPPORTS AS WELL AS ANY ADDITIONAL EQUIPMENT, ETC. NOT SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS BUT NECESSARY TO PROVIDE COMPLETE AND WORKABLE SYSTEMS.</div> <div>20. DO NOT SCALE THESE DRAWINGS. TAKE ALL MEASUREMENTS IN THE FIELD IN COORDINATION WITH ALL EQUIPMENT AS APPROVED &amp; WITH ALL OTHER TRADES.</div> <div>21. ALL ROTATING EQUIPMENT SHALL HAVE FLEXIBLE PIPE OR DUCT CONNECTIONS AND APPROVED VIBRATION ISOLATORS.</div> <div>22. CONTRACTOR SHALL VERIFY DUCT, PIPING AND EQUIPMENT LOCATIONS FOR INTERFERENCES BEFORE INSTALLATION.</div> <div>23. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.</div>	<div>1. PRIOR TO COMMENCING WORK OF THIS SECTION, EXAMINE SITE AND CONDITIONS UNDER WHICH WORK WILL BE PERFORMED. DETERMINE EXACT LOCATIONS OF EXISTING EQUIPMENT, PIPING AND CONTROLS. REPORT TO OWNER ANY CONDITIONS THAT MIGHT ADVERSELY AFFECT WORK. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.</div> <div>2. ABANDONING OF DUCTWORK, PIPING OR EQUIPMENT IN PLACE SHALL NOT BE ALLOWED. COMPLETE REMOVAL REQUIRED UNLESS NOTED OTHERWISE.</div> <div>3. DUCTS TO BE REMOVED: REMOVE PORTION OF DUCTS INDICATED TO BE REMOVED &amp; CAP REMAINING DUCTS WITH SAME OR COMPATIBLE DUCTWORK MATERIAL.</div> <div>4. EQUIPMENT TO BE REMOVED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT.</div> <div>5. EQUIPMENT TO BE SALVAGED: DISCONNECT, CAP SERVICES, REMOVE EQUIPMENT, DELIVER TO OWNER.</div> <div>6. COMPLY WITH ALL STATE &amp; LOCAL CODES AS TO REMOVAL &amp; DISPOSAL OF EQUIPMENT FROM SITE.</div> <div>7. COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION.</div> <div>8. REMOVE PREVIOUSLY ABANDONED WORK IN THE WAY OF EXISTING CONSTRUCTION, OR AS NOTED.</div> <div>9. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.</div> <div>10. PERMITS: GIVE ALL REQUIRED NOTICES, FILE ALL REQUIRED PLANS AND SPECIFICATIONS RELATING TO THE WORK OF THIS SECTION WITH THE PROPER AUTHORITIES AND PAY FOR ANY REQUIRED PERMITS.</div> <div>11. ALL AIR-CONDITIONING EQUIPMENT AND SYSTEMS SHALL BE REMOVED OR DEMOLISHED WITHOUT RELEASING REFRIGERANTS. REFRIGERANT RECOVERY IS TO BE PERFORMED BY A REFRIGERANT RECOVERY TECHNICAL CERTIFIED BY AN EPA-APPROVED CERTIFICATION PROGRAM.</div> <div>12. ALL EQUIPMENT AND SYSTEMS TO BE REMOVED OR DEMOLISHED UNDER THIS SECTION AND NOT DESIRED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE ALL SUCH EQUIPMENT FROM THE SITE PROMPTLY AFTER DETACHMENT FROM BUILDING STRUCTURE.</div> <div>13. EXISTING PIPING SHOWN ON DRAWINGS DOES NOT INDICATE FULL EXTENT OF PIPING DEMOLITION. FIELD VERIFICATIONS REQUIRED.</div>										
DAMPERS														
<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>ACD</div> <div>SD</div> <div>BD</div> <div>FD</div> <div>FS</div> <div>VD</div>	MOTORIZED/AUTO CONTROL DAMPER	SMOKE DAMPER	BACK DRAFT DAMPER	FIRE DAMPER	FIRE & SMOKE DAMPER	VOLUME DAMPER								
CONTROLS LEGEND														
<div><div></div><div></div><div></div></div> <div>HEAT/COOL THERMOSTAT</div> <div>TIME CLOCK</div> <div>CONTROL LINE</div>														

FAN SCHEDULE											
TAG No.	LOCATION(S) SERVED	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	FAN DATA			ELECTRICAL DATA			REMARKS
					CFM	RPM	ESP(IN)	VOLTS	PHASE	HP	
TEF-1	LOCKER ROOMS	GREENHECK	SQ-130HP-VG	INLINE	900	---	1.0	208	1	3/4	PROVIDE MOUNTING BRACKETS, SPRING ISOLATION, TIME CLOCK, SPEED CONTROLLER AND DISCONNECT

1) COORDINATE INSTALLATION LOCATIONS, MOUNTING AND SUPPORT REQUIREMENTS WITH EXISTING ARCHITECTURE AND STRUCTURAL ELEMENTS.

HVAC POWER EQUIPMENT SCHEDULE										
TAG	DESCRIPTION	LOCATION	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	SERVING EQUIPMENT TAG	FIRE ALARM CONNECTION	ELECTRICAL DATA			REMARKS
							VOLTS	PHASE	HZ	
M	MOTORIZED DAMPER	REFER TO DWGS	—	—	—	NO	120	1	60	

REGISTER, GRILLE & DIFFUSER SCHEDULE										
TAG	TYPE	CFM	NECK SIZE	FRAME TYPE	MOUNTING	DAMPER	MATERIAL	FINISH	MAN. & MODEL No.	FRAME SIZE
SD1	SUPPLY	VARIES	VARIES	SQUARE	CEILING	YES	STEEL	WHITE	TITUS/TDC	24X24
ER1	EXHAUST	VARIES	VARIES	SQUARE	CEILING	NO	STEEL	WHITE	TITUS/300RL	N/A

- REFER TO DRAWINGS FOR NECK SIZES AND CFM UNLESS NOTED ABOVE
- COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL REFLECTED CEILING PLANS
- COORDINATE FINISH & COLOR WITH ARCHITECT
- PROVIDE OPPOSED BLADE DAMPERS, FRAME SUITABLE FOR SURFACE MOUNTING, CEILING OR SIDEWALL
- PROVIDE SQUARE TO ROUND TRANSITIONS AS NEEDED

HOT WATER CONVECTOR SCHEDULE									
TAG No.	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	HOT WATER DATA					REMARKS
				EWI(°F)	LWT(°F)	MBH	GPM	WPD(FT)	
CV-1	STERLING	632-32	FLOOR	180	160	6.0	0.4	0.07	PROVIDE MODULATING HOT WATER CONTROL VALVE, THERMOSTAT & ALL MOUNTING HARDWARE
CV-2	STERLING	664-32	FLOOR	180	160	12.0	1.2	0.33	PROVIDE MODULATING HOT WATER CONTROL VALVE, THERMOSTAT & ALL MOUNTING HARDWARE

1) ALL EQUIPMENT CAPACITIES INDICATED FOR 30% PROPYLENE GLYCOL SOLUTION.

PIPE MATERIAL TABLE				
SERVICE	LOCATION	PIPING	FITTINGS	JOINTS
HEATING HOT WATER PIPING HWS & HWR (DIAMETER < 2-1/2")	ABOVE GROUND	TYPE "L" SEAMLESS COPPER TUBING	WROUGHT COPPER	95/5 SOLDER
HEATING HOT WATER PIPING HWS & HWR (DIAMETER ≥ 2-1/2")		SCHEDULE 40 SEAMLESS BLACK STEEL	SCHEDULE 40 SEAMLESS	MECHANICAL CONNECTION OR WELDED

PIPE INSULATION TABLE					
SERVICE/LOCATION	INSULATION TYPE	FITTING INSULATION TYPE	INSULATION WALL THICKNESS (INCHES)		
			FOR PIPE DIA. (INCHES)		
HEATING HOT WATER PIPING HWS & HWR	FIBERGLASS WITH ALL SERVICE JACKET	FIBERGLASS WITH PVC JACKET	Ø < 1"	1" ≤ Ø < 1-1/2"	1-1/2" ≤ Ø < 4"
			1-1/2"	1-1/2"	2"

DUCT INSULATION TABLE		
SERVICE/LOCATION	INSULATION TYPE	FITTING INSULATION TYPE
SUPPLY, RETURN & OUTSIDE AIR DUCT INSULATION (WITHIN BUILDING)	2" FIBERGLASS DUCT WRAP WITH FSK FACING	—————→
SUPPLY, RETURN & OUTSIDE AIR DUCT INSULATION (OUTSIDE OF BUILDING)	3" FIBERGLASS DUCT WRAP WITH ALUMINUM JACKET	—————→
EXHAUST DUCT INSULATION (BETWEEN EXTERIOR PENETRATION & DAMPER)	2" FIBERGLASS DUCT WRAP WITH FSK FACING	—————→



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HVAC • Electrical • Plumbing • Fire Protection

POLICE  
DEPARTMENT  
LOCKER ROOM  
RENOVATIONS



CITY OF LOWELL

50 ARCAD DRIVE  
LOWELL, MA 01852

Drawing Title:

HVAC  
LEGEND, NOTES  
& ABBREVIATIONS

Revisions:

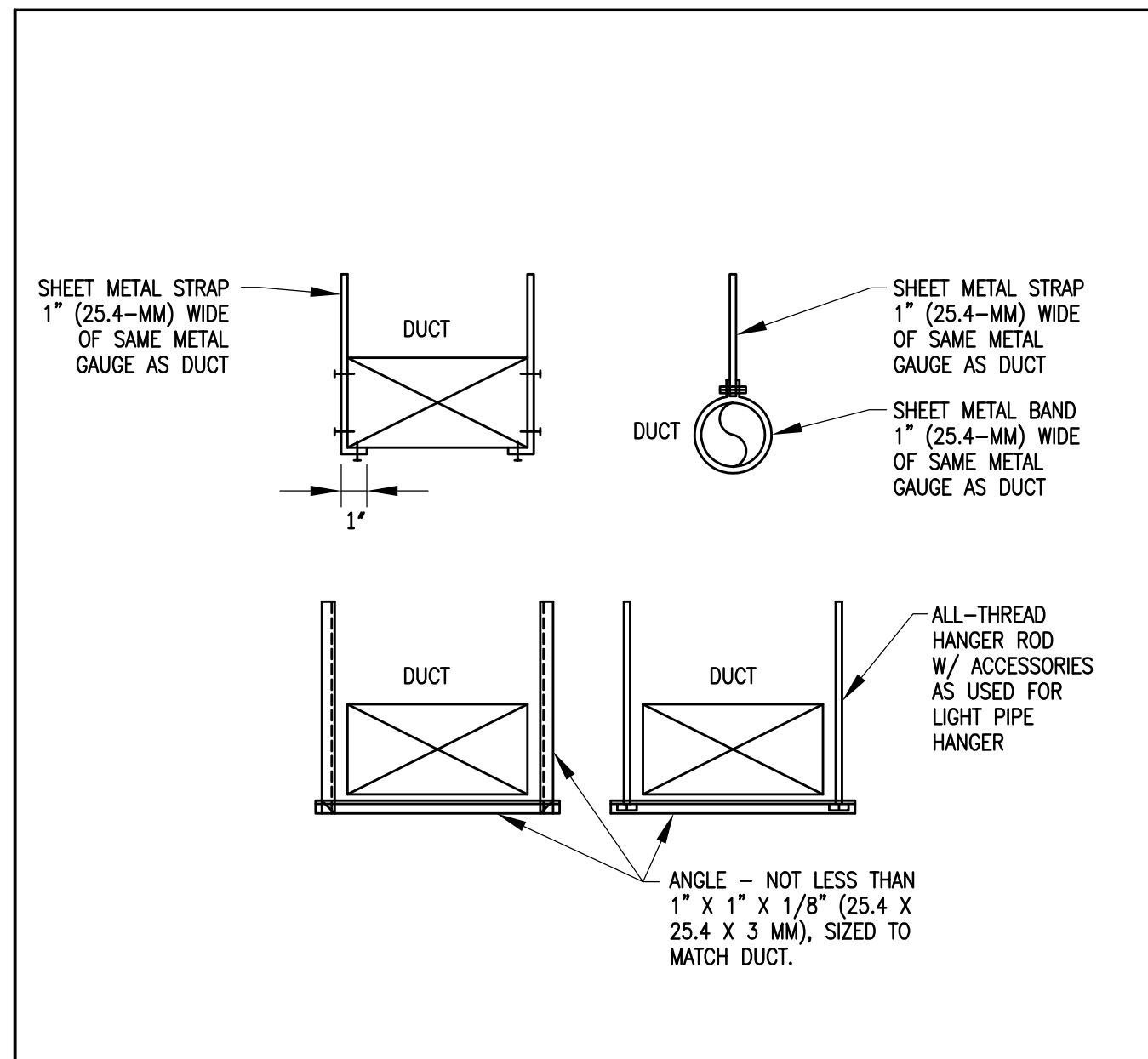
Submission:

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Date: 03/04/20  
Project Number: BLW17263  
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Drawn By: VS  
Scale: AS NOTED

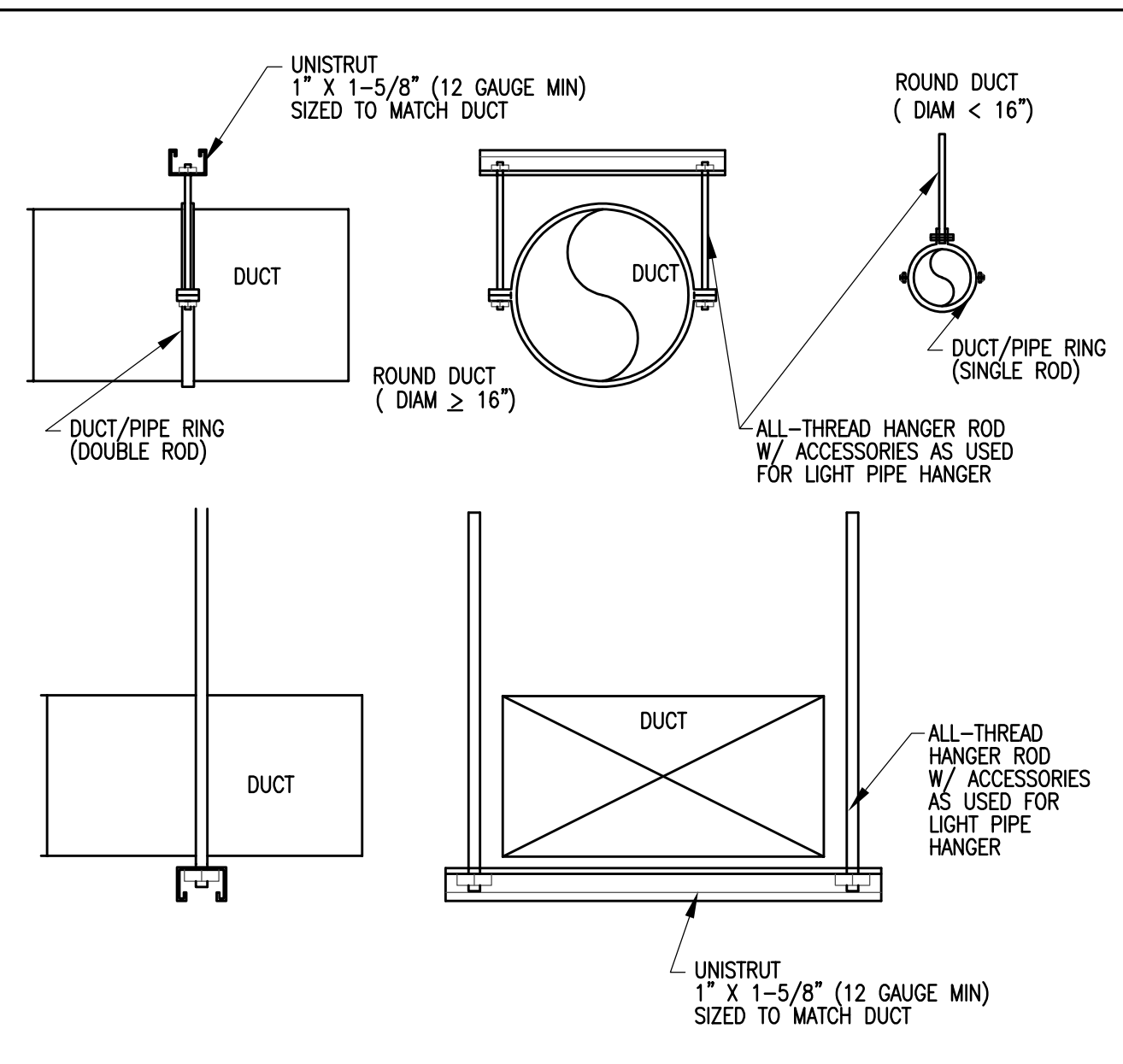
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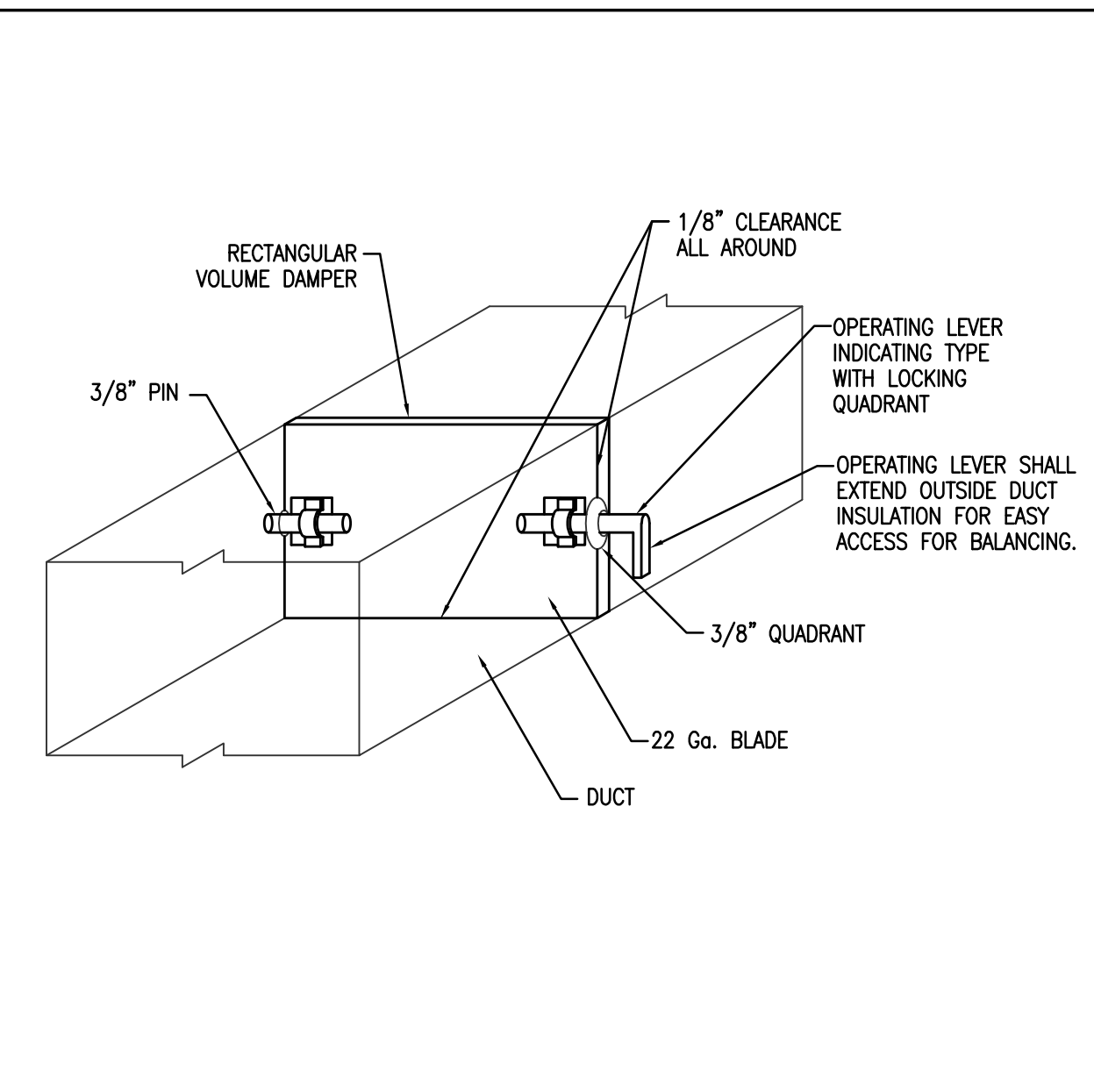
SHEET-METAL DUCT HANGERS

NO SCALE  
15616-02



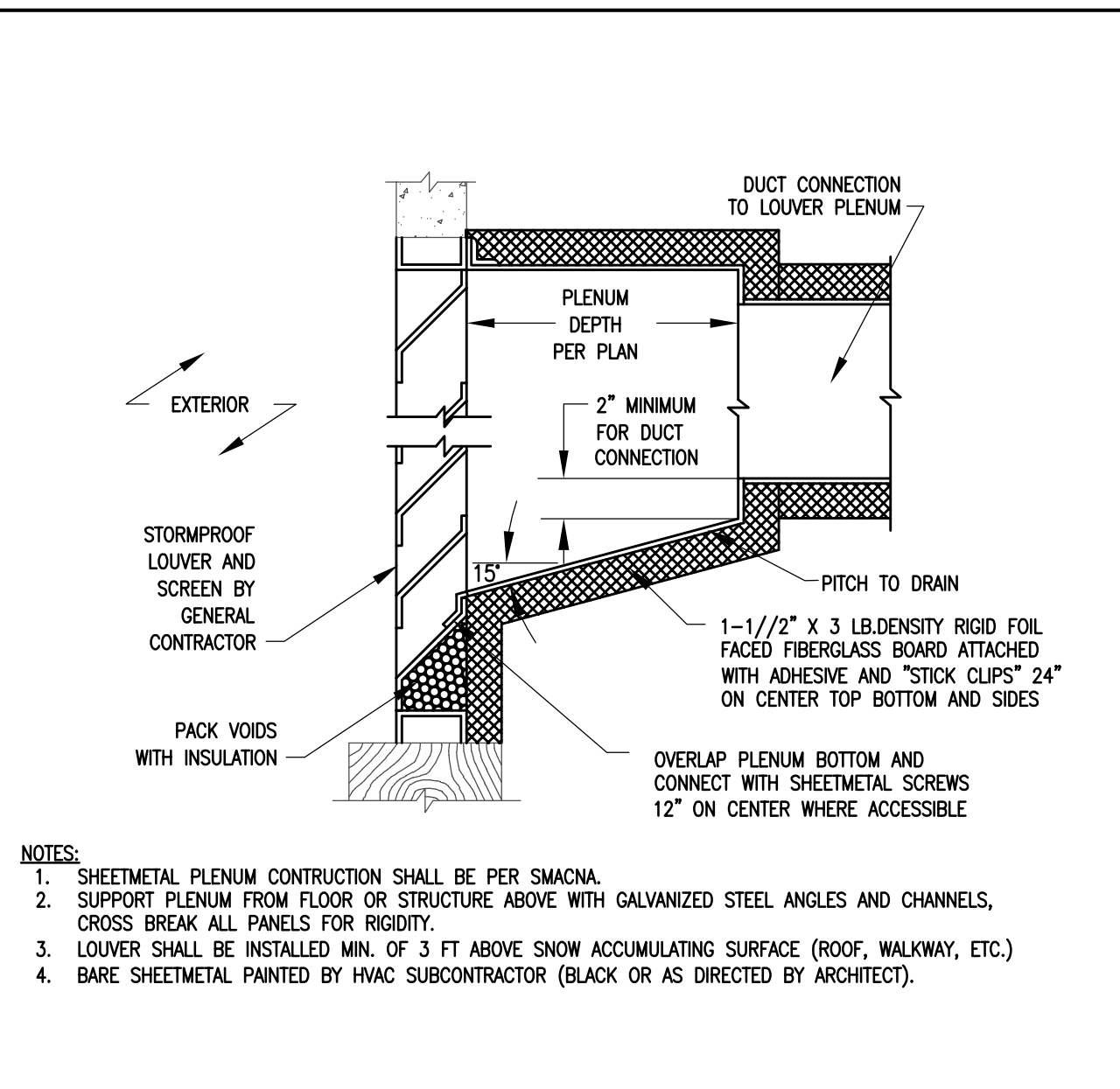
TYPICAL SHEET METAL DUCT HANGERS (EXPOSED)

NOT TO SCALE



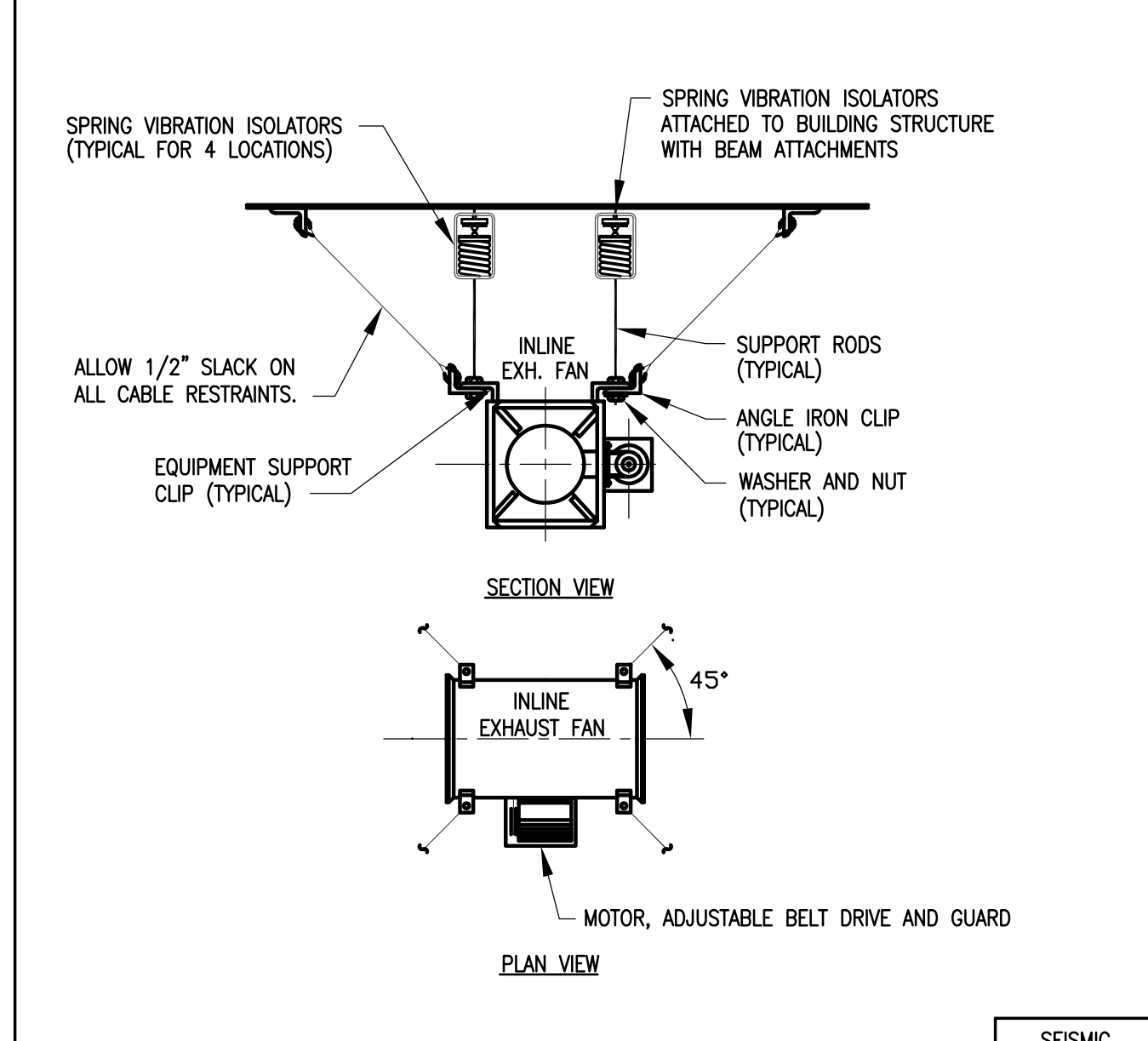
TYPICAL MANUAL VOLUME DAMPER DETAIL

NO SCALE



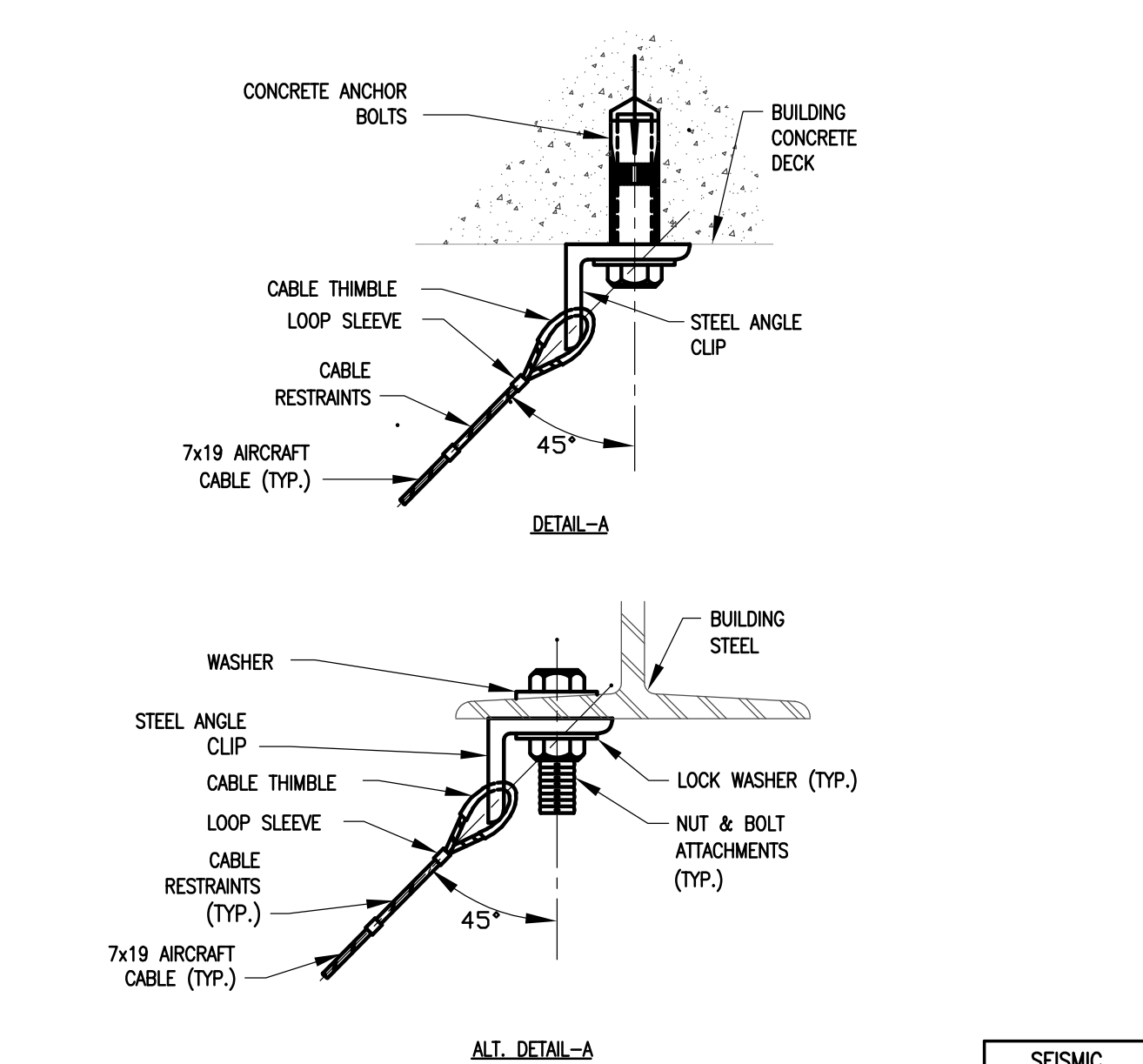
TYPICAL LOUVER PLENUM CONNECTION DETAIL

NO SCALE



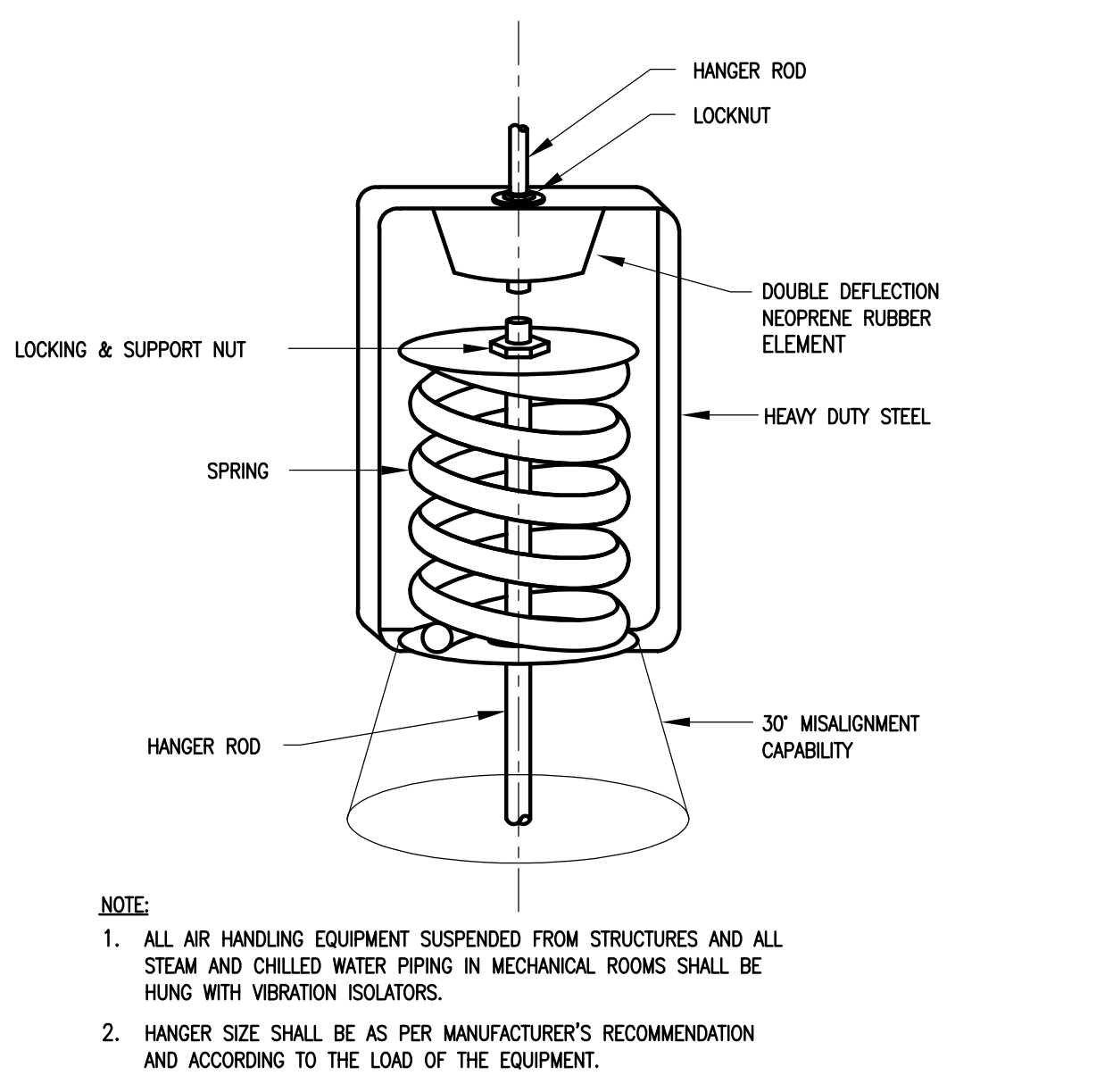
RESTRAINTS FOR HVAC SUSPENDED EQUIPMENT #2

SEISMIC  
NO SCALE  
15607-03S



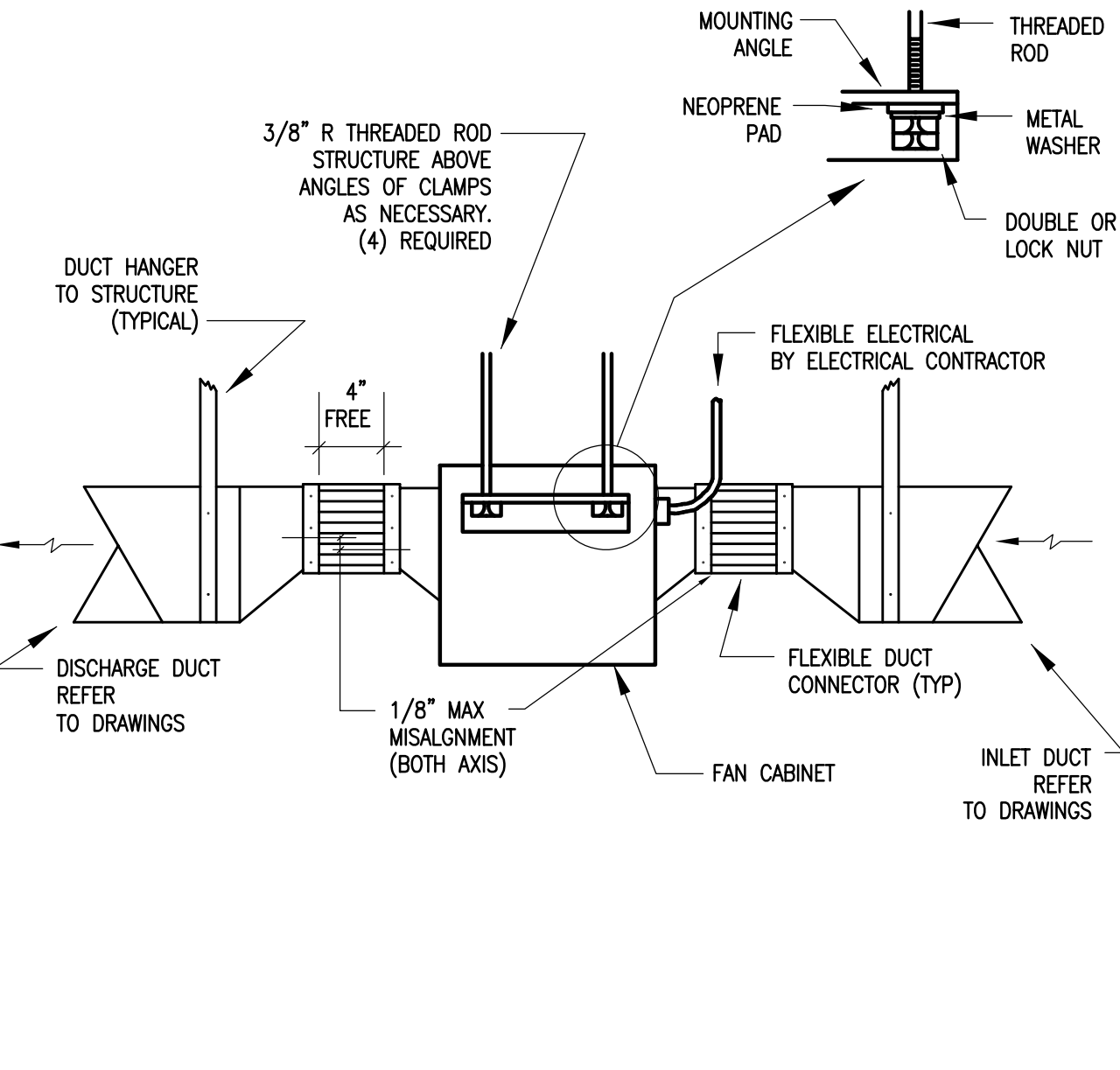
(DETAIL "A") RESTRAINTS

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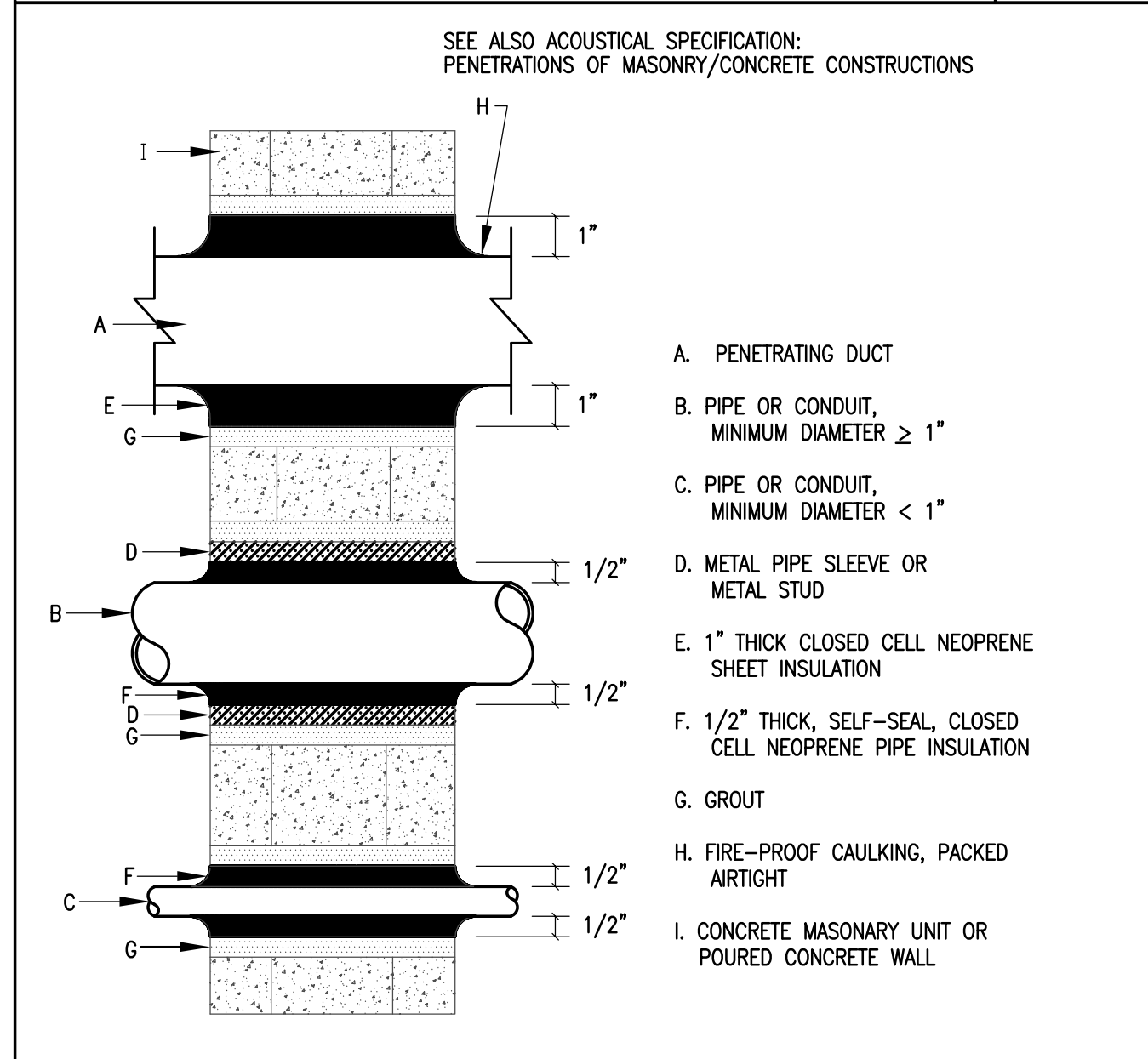
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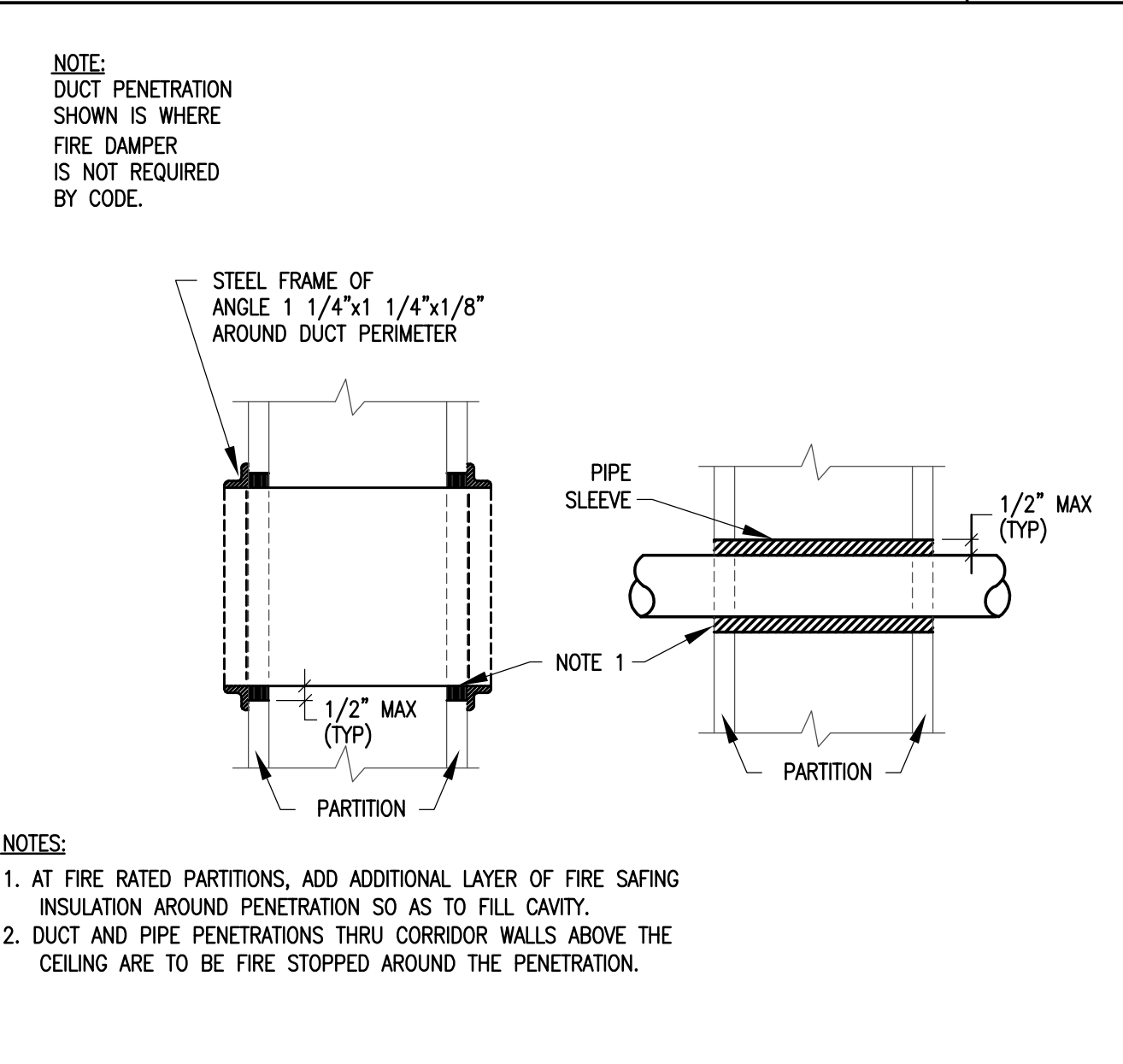
INLINE EXHAUST FAN DETAIL

NO SCALE  
15673-01



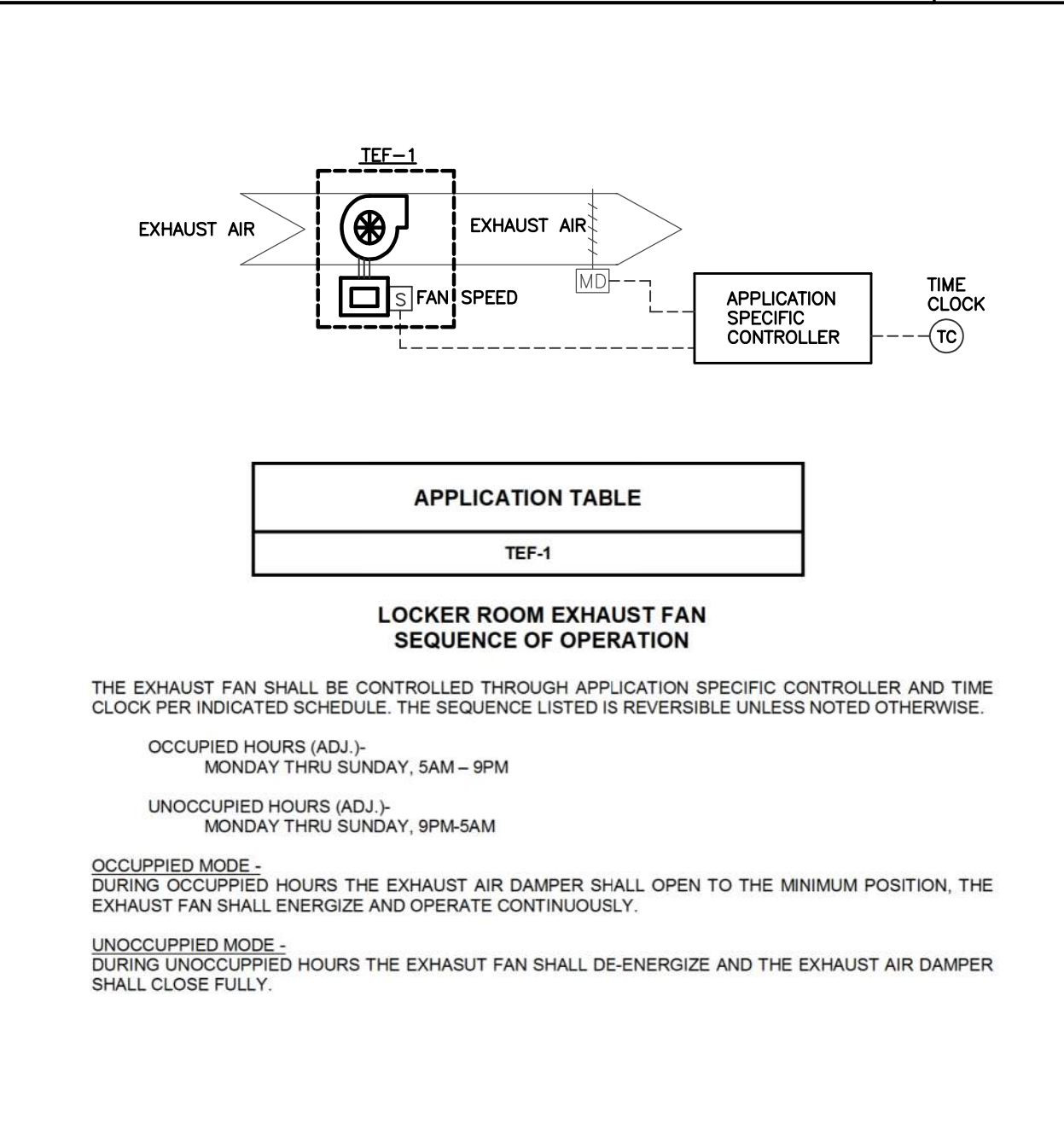
PENETRATIONS OF MASONRY/CONCRETE PARTITIONS BY DUCTS, PIPES OR CONDUITS

NO SCALE  
15617-11



DUCT AND PIPE PENETRATIONS

NO SCALE  
15617-08



LOCKER ROOM EXHAUST FAN SEQUENCE OF OPERATION

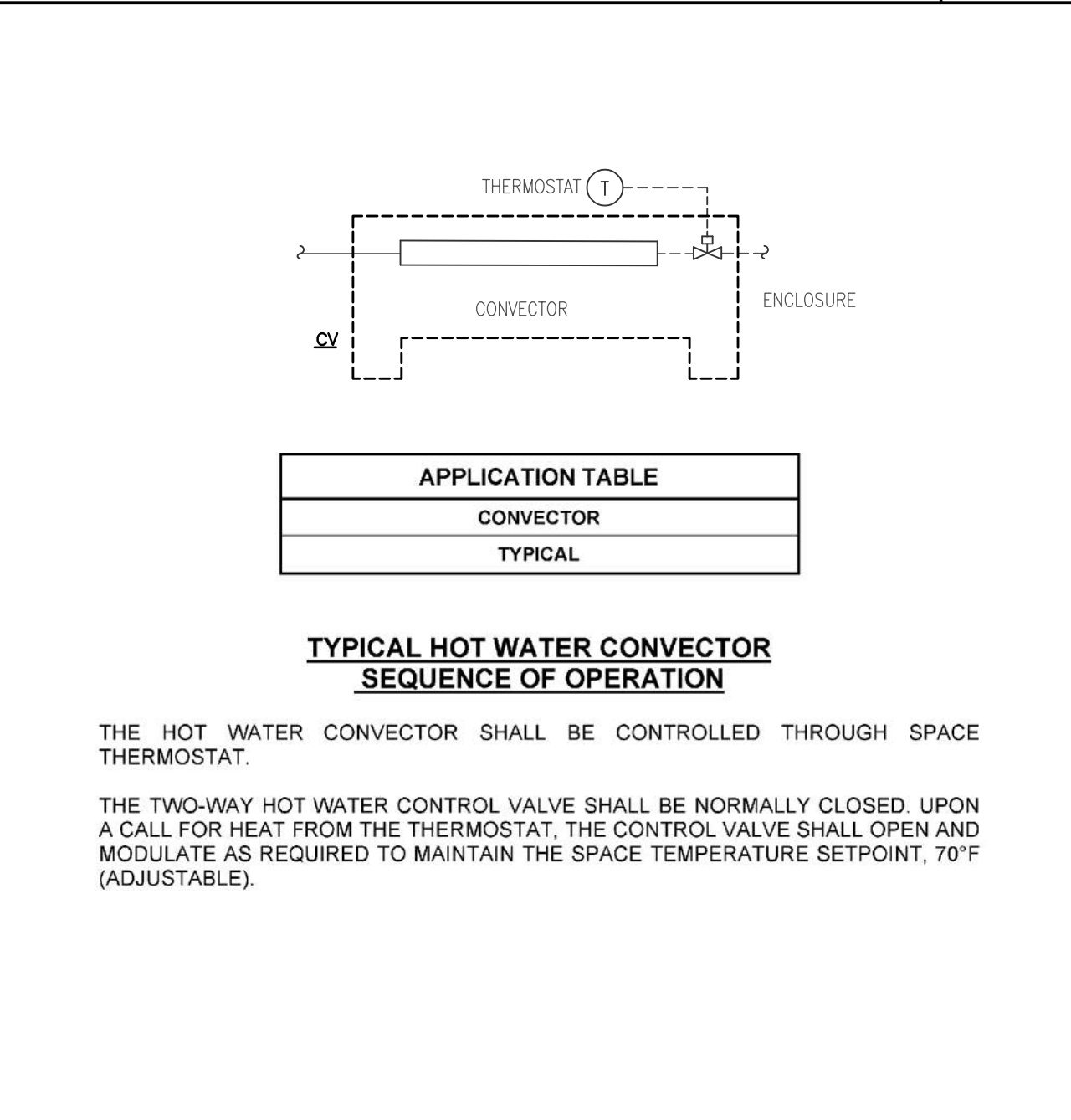
THE EXHAUST FAN SHALL BE CONTROLLED THROUGH APPLICATION SPECIFIC CONTROLLER AND TIME CLOCK PER INDICATED SCHEDULE. THE SEQUENCE LISTED IS REVERSIBLE UNLESS NOTED OTHERWISE.

OCCUPIED HOURS (ADJ.) - MONDAY THRU SUNDAY, 5AM - 9PM

UNOCCUPIED HOURS (ADJ.) - MONDAY THRU SUNDAY, 9PM-5AM

OCCUPIED MODE - DURING OCCUPIED HOURS THE EXHAUST AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION, THE EXHAUST FAN SHALL ENERGIZE AND OPERATE CONTINUOUSLY.

UNOCCUPIED MODE - DURING UNOCCUPIED HOURS THE EXHAUST FAN SHALL DE-ENERGIZE AND THE EXHAUST AIR DAMPER SHALL CLOSE FULLY.



TYPICAL HOT WATER CONVECTOR SEQUENCE OF OPERATION

THE HOT WATER CONVECTOR SHALL BE CONTROLLED THROUGH SPACE THERMOSTAT.

THE TWO-WAY HOT WATER CONTROL VALVE SHALL BE NORMALLY CLOSED. UPON A CALL FOR HEAT FROM THE THERMOSTAT, THE CONTROL VALVE SHALL OPEN AND MODULATE AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT, 70°F (ADJUSTABLE).

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**POLICE DEPARTMENT LOCKER ROOM RENOVATIONS**

**CITY OF LOWELL**  
50 ARCAD DRIVE  
LOWELL, MA 01852

Drawing Title:

**HVAC DETAILS & SEQUENCES**

Revisions:

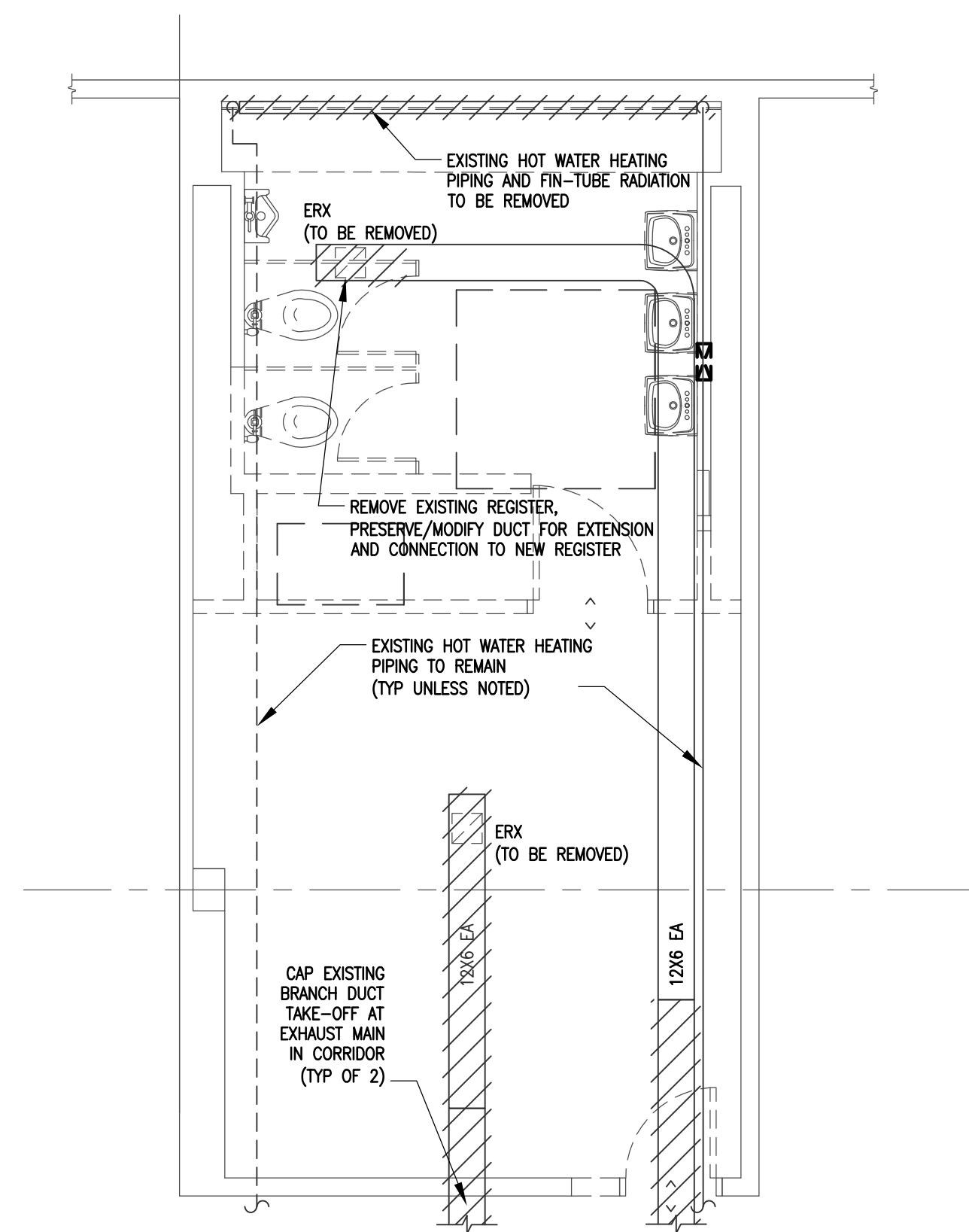
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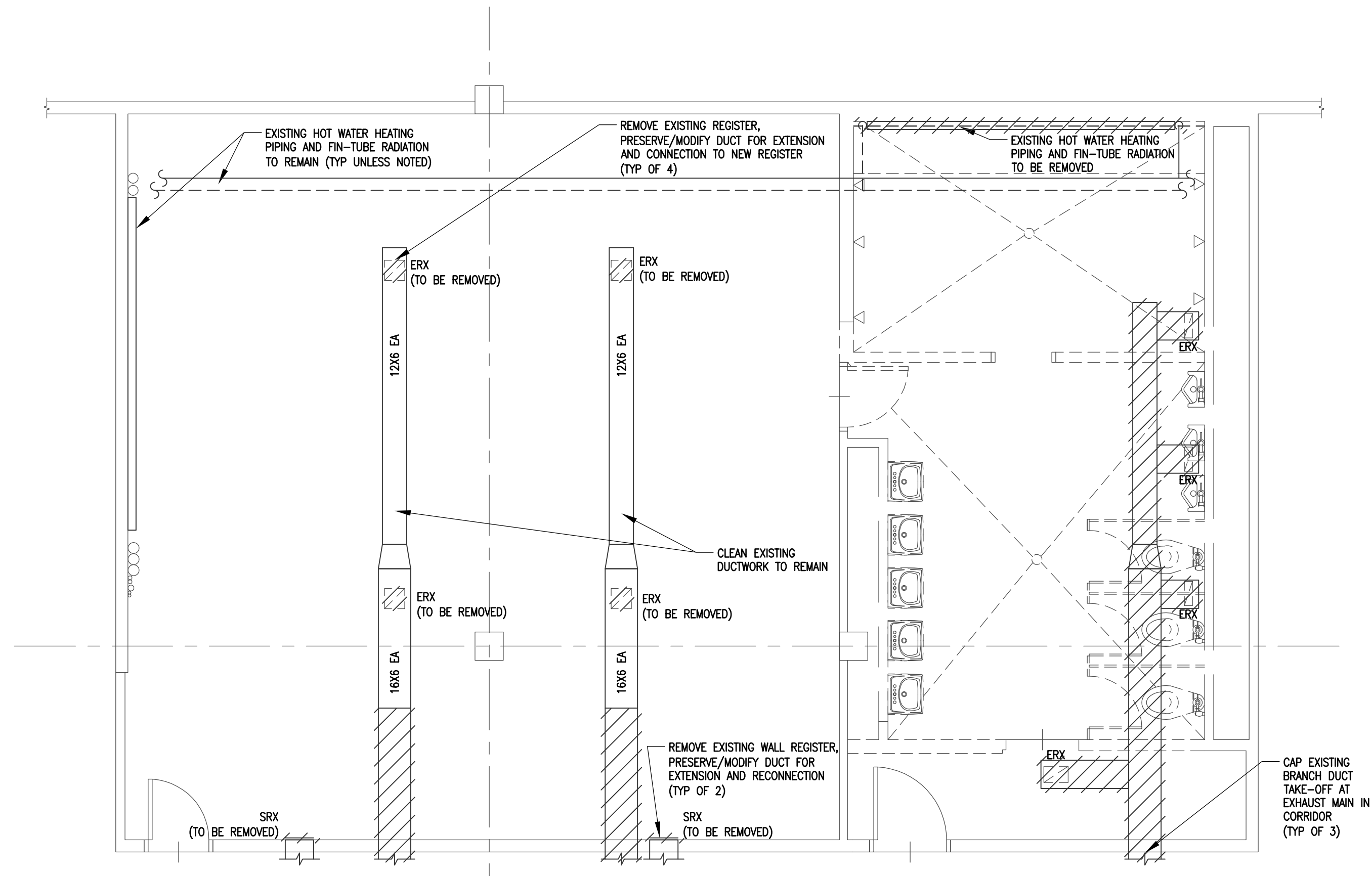
Date: 03/04/20  
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**H0-02**



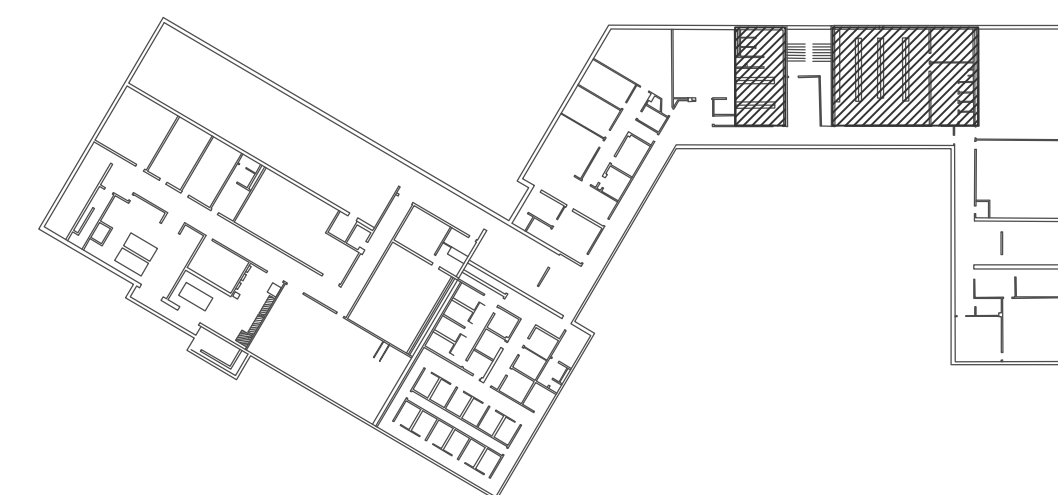


1 HVAC -  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"



2 HVAC  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"

- GENERAL DEMOLITION NOTES:
- 1) CONTRACTOR SHALL COORDINATE AND PERFORM ALL WORK AFFECTING OWNER AND OCCUPANTS IN A MANNER AS TO NOT HINDER THE NORMAL BUILDING OPERATIONS.
  - 2) THE GENERAL CONTRACTOR SHALL COORDINATE SELECTIVE DEMOLITION OF ALL TRADES WITH EXISTING CONDITIONS AND WITH OWNER PRIOR TO THE START OF ANY DEMOLITION. ALL CEILINGS, WALLS, FLOORS REQUIRED TO BE ALTERED AS PART OF THIS WORK SHALL BE RETURNED TO EXISTING/ORIGINAL FINISH AND APPEARANCE.
  - 3) IF ANY EXISTING ACT CEILINGS AND WALLS TO REMAIN ARE REQUIRED TO BE TEMPORARILY REMOVED/MODIFIED FOR THIS WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL/STORAGE OF EXISTING COMPONENTS, ETC. AND BE RESPONSIBLE FOR REINSTALLING, TEMPORARILY SECURING OR RELOCATING ALL DEVICES.
  - 4) EXISTING HVAC SYSTEMS, COMPONENTS AND APPURTENANCES ARE TO REMAIN UNLESS OTHERWISE INDICATED.
  - 5) CONTRACTOR SHALL CLEAN AND VACUUM (FREE OF DUST/GREASE/DEBRIS) ALL EXISTING DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS INDICATED TO REMAIN.



KEY PLAN



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## POLICE DEPARTMENT LOCKER ROOM RENOVATIONS



CITY OF LOWELL

50 ARCAD DRIVE  
LOWELL, MA 01852

Drawing Title:

## HVAC DEMOLITION PART PLANS

Revisions:

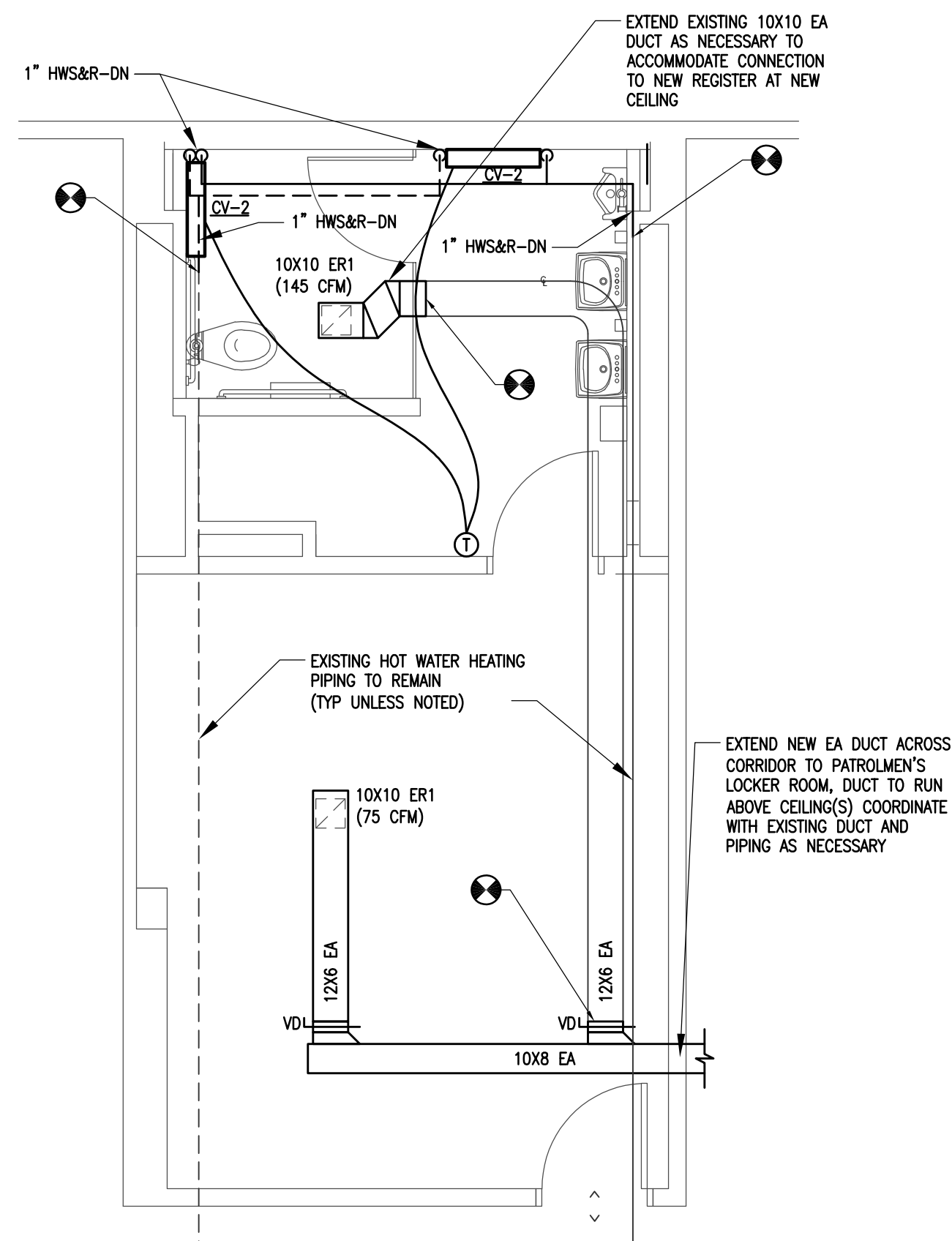
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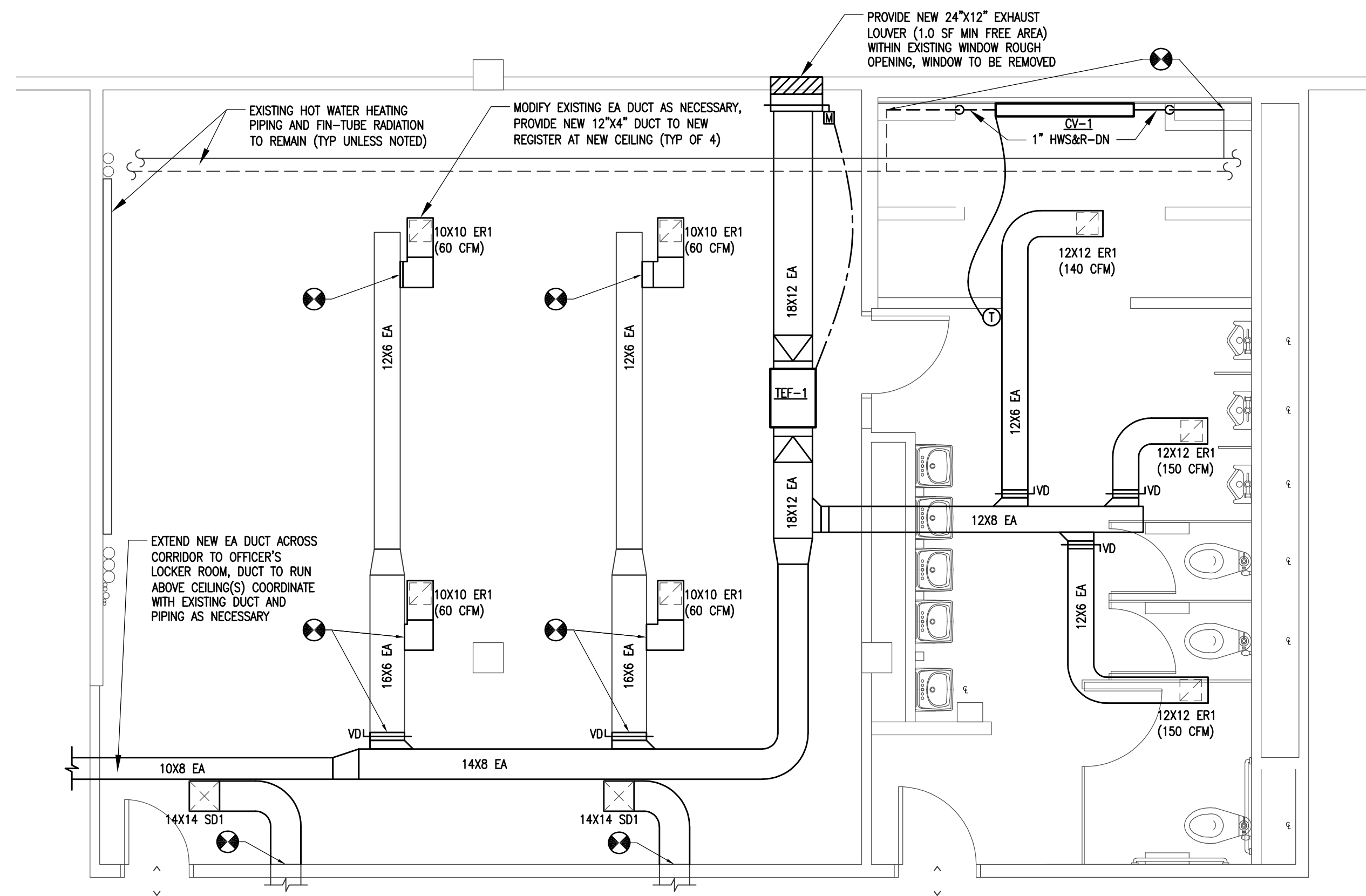
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Project Number: BLW17263  
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Drawn By: VS  
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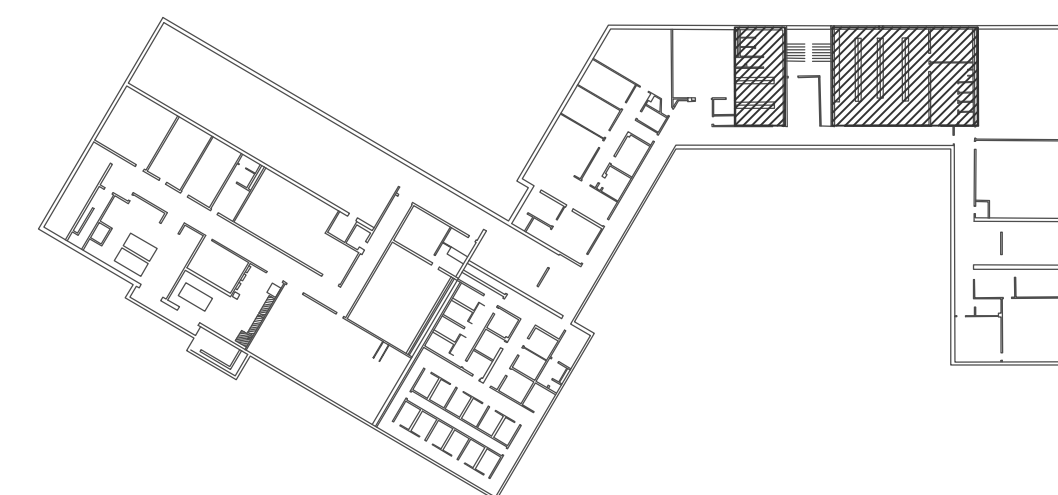




1 HVAC -  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"



2 HVAC  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"



KEY PLAN

- GENERAL NOTES:
- 1) CONTRACTOR SHALL COORDINATE AND PERFORM ALL WORK AFFECTING OWNER AND OCCUPANTS IN A MANNER AS TO NOT HINDER THE NORMAL BUILDING OPERATIONS.
  - 2) CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT MOUNTING WITH ARCHITECTURAL REFLECTED CEILING PLAN AND INSTALL TO ACHIEVE THE MAXIMUM CLEAR HEIGHT POSSIBLE.
  - 3) CONTRACTOR SHALL INSULATE ALL GENERAL EXHAUST DUCTWORK FROM ENVELOPE PENETRATION TO DAMPERS (GRAVITY OR MOTORIZED) WITH 1-1/2" THICK WRAP INSULATION.
  - 4) CONTRACTOR SHALL PROVIDE MANUFACTURER'S START-UP, FULL TESTING AND BALANCING OF ALL EQUIPMENT SERVING SPACE. ALL EXISTING AND NEW EQUIPMENT SHALL BE BALANCED TO THE FLOWS INDICATED ON THESE PLANS, ANY DUCT MODIFICATIONS OR DAMPERS NECESSARY FOR BALANCING SHALL BE FURNISHED BY HVAC CONTRACTOR.
  - 5) CONTRACTOR SHALL SEAL AND PROTECT ALL DUCTWORK (NEW AND EXISTING) DURING ENTIRETY OF CONSTRUCTION.
  - 6) CONTRACTOR SHALL CLEAN AND VACUUM (FREE OF DUST/GREASE/DEBRIS) ALL EXISTING DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS INDICATED TO REMAIN.
  - 7) ALL PIPING AND DUCTWORK SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE. ALL HVAC EQUIPMENT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, CURB OR EQUIPMENT STAND.
  - 8) ALL DUCT CONNECTIONS TO FANS, AIR HANDLING UNITS AND FAN COIL UNITS SHALL BE MADE WITH CONVENTIONAL FLEXIBLE DUCT CONNECTIONS. ALL DUCT CONNECTIONS TO AIR DEVICES SUCH AS GRILLES AND REGISTERS SHALL BE MADE WITH A MAXIMUM OF 6FT FLEXIBLE DUCT.
  - 9) ELECTRICAL CONNECTIONS TO ISOLATED EQUIPMENT SHOULD BE MADE WITH SECTIONS OF FLEXIBLE ELECTRICAL CONDUIT THAT ARE INSTALLED IN A SLACK CONDITION.
  - 10) ALL DUCT JOINTS, SEAMS (LONGITUDINAL AND TRANSVERSE), CONNECTIONS SHALL BE COMPLETELY SEALED WITH MASTIC AND/OR MASTIC TAPE.
  - 11) ALL DUCT ELBOWS SHALL BE COMPLETELY SEALED WITH MASTIC.

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**POLICE  
DEPARTMENT  
LOCKER ROOM  
RENOVATIONS**



**CITY OF LOWELL**

50 ARCAD DRIVE  
LOWELL, MA 01852

Drawing Title:

**HVAC  
NEW WORK  
PART PLANS**

Revisions:

Submission:

**BID DOCUMENTS**

Date: 03/04/20  
Project Number: BLW17263  
Project Manager: KB  
Drawn By: VS  
Scale: AS NOTED

**H2-01**



GENERAL SPECIFICATIONS

- CONDITIONS OF THE CONTRACT AND DIVISION 1, GENERAL REQUIREMENTS APPLY TO WORK SHOWN ON THESE DRAWINGS. EXAMINE DRAWINGS AND OTHER SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK SHOWN ON THESE DRAWINGS.
- PROVIDE ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS IN QUANTITIES NECESSARY TO COMPLETE WORK.
- VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED. REPORT ADVERSE CONDITIONS IN WRITING TO ARCHITECT. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS INCLUDING PREPARATORY WORK DONE BY OTHERS.
- PERFORM WORK AND PROVIDE MATERIALS AND EQUIPMENT AS SHOWN ON DRAWINGS. COORDINATE ELECTRICAL WORK WITH WORK SHOWN ON THESE DRAWINGS.
- GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.
- PERFORM WORK AS REQUIRED BY CODES, REGULATIONS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES WITH LAWFUL JURISDICTION.
- MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE. MATERIAL AND INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE.
- MAINTAIN RECORD DRAWINGS ON SITE. RECORD SET MUST BE COMPLETE, CURRENT AND AVAILABLE FOR INSPECTION WHEN REQUESTIONS FOR PAYMENT ARE SUBMITTED.
- GUARANTEE WORK IN WRITING FOR ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER.
- SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERPRETED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. PROVIDE INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS BUT NOT SHOWN ON PLANS, AND VICE VERSA, AS IF EXPRESSLY REQUIRED ON BOTH.
- UTILIZE MOLDED CASE CIRCUIT BREAKERS. MINIMUM INTERRUPTING CAPACITY SHALL BE 10,000 AMPS SYMMETRICAL AT 240 VOLTS, AND 14,000 AMPS SYMMETRICAL AT 480 VOLTS.
- TEMPORARY LIGHT AND POWER SHALL BE PROVIDED ON SITE BY THE ELECTRICAL CONTRACTOR. COST OF ELECTRICITY SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- ADDRESS QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECT INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
- SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN THIRTY (30) DAYS AFTER AWARD OF CONTRACT. CHECK, STAMP AND MARK WITH PROJECT NAMES SUBMITTALS BEFORE TRANSMITTING TO ARCHITECT. INDICATE DEVIATIONS FROM CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL EQUIPMENT SHOWN ON THE DRAWINGS. PROVIDE SHOP DRAWINGS ON LIGHTING, CIRCUIT BREAKERS, CONDUIT, WIRING DEVICES, LIGHTING CONTROL DEVICES, CABLE AND CONDUCTORS, FIRE ALARM INCLUDING BATTERY CALCULATIONS, RISER DIAGRAM, EQUIPMENT CUTS AND DISCONNECTS.
- DEVIATION FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED, SHALL BE REQUESTED IN SEPARATE LETTER, WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE, OR OTHER CAUSE.
- SUBSTITUTIONS FOR SCHEDULED LIGHTING EQUIPMENT WILL BE REJECTED UNLESS SUBSTITUTION SUBMITTAL IS RECEIVED WITHIN TEN (10) DAYS AFTER CONTRACT AWARD.
- SCHEDULE AT LEAST TEN (10) WORKING DAYS, EXCLUSIVE ON TRANSMITTAL TIME FOR SUBMITTAL REVIEW.
- ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE.
- ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE.
- ALL COMPONENTS SHOWN ON THE RISER DIAGRAMS, BUT NOT ON THE PLAN OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH.
- LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS.
- ALL RACEWAY RUNNING THROUGH BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS.
- CONDUIT HOMERUNS SHOWN ON THE DRAWING WITH MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMMATICALLY. THE CONTRACTOR SHALL NOT INSTALL MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS IN A RACEWAY UNLESS DONE SO STRICTLY BY THE NATIONAL ELECTRICAL CODE AS AMENDED BY THE STATE.
- THE ELECTRICAL CONTRACTOR SHALL CONSULT AND COOPERATE WITH CONTRACTORS OF OTHER TRADES TO AVOID ANY INTERFERENCE IN THE INSTALLATION OF THEIR RESPECTIVE EQUIPMENT. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT
- BRANCH CIRCUIT WIRING MAY NOT BE SHOWN GRAPHICALLY ON DRAWINGS AND MAY BE INDICATED BY CIRCUIT NUMBERS BESIDE FIXTURES, DEVICES AND EQUIPMENT. PROVIDE COMPLETE WIRING SYSTEM WHETHER OR NOT INDICATED GRAPHICALLY. PHASE BALANCE ALL PANELBOARDS IN FIELD. CIRCUIT NUMBERS ARE DIAGRAMMATIC, UTILIZE AVAILABLE SPACE OR PROVIDE ADDITIONAL BREAKERS AND PANELBOARDS AS NECESSARY.
- ALL NEW WIRING SHALL BE TYPE THHN/THWN RATED 75-90°C, 600V. WET-DRY LOCATIONS. MINIMUM BRANCH CIRCUIT WIRING SHALL BE NO. 12 AWG SOLID COPPER. BRANCH CIRCUITS LONGER THAN 150 FEET FOR 120 VOLTS OR 250 FEET FOR 277 VOLTS SHALL BE AT LEAST NO. 10 AWG FROM PANEL TO LAST OUTLET.
- ALL NEW EXPOSED INTERIOR WIRING ABOVE 8'-0" NOT EXPOSED TO DAMAGE SHALL BE INSTALLED IN ELECTRIC METALLIC TUBING. ALL WIRING IN CONCRETE SLABS OR EXPOSED IN ROOM BELOW 8'-0" OR EXPOSED TO DAMAGE SHALL BE INSTALLED IN RIGID STEEL CONDUIT. EXTERIOR WIRING SHALL BE IN GALVANIZED RIGID METALLIC CONDUIT.
- INTERRUPTIONS TO EXISTING ELECTRIC SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE ARCHITECT OR OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS, TWENTY-FOUR (24) HOUR NOTICE IS REQUIRED.
- ALL GROUNDING SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AS AMENDED BY THE STATE OF MASSACHUSETTS.
- ALL FIREPROOFING FOR ELECTRICAL PENETRATIONS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- SYSTEM FEEDERS AND BRANCH CIRCUITS THAT PASS THROUGH ALTERED AREAS AND SERVE OTHER AREAS SHALL BE MAINTAINED.
- PROVIDE NEW TYPED IDENTIFICATION DIRECTORY IN PANELBOARDS INDICATING CIRCUIT FUNCTION OR EQUIPMENT SERVED. LABEL ALL ELECTRICAL PANELS, DISCONNECT SWITCHES AND OTHER EQUIPMENT WITH ENGRAVED VINYL PLATES. NAMEPLATE LETTERING SHALL BE 1/4" MINIMUM.
- DISCONNECT SWITCHES SHALL BE HEAVY DUTY (HD), SIDE OPERATED WITH INTERLOCKING COVER, G.E., SQUARE "D", CUTLER HAMMER OR SIEMENS OR EQUAL.
- ALL WIRING (LOW VOLTAGE, TEL/DATA, FIRE ALARM, POWER BRANCH CIRCUIT) SHALL BE PLENUM RATED; NO EXCEPTIONS. NON-PLENUM RATED CABLES OF ANY KIND SHALL NOT BE PROVIDED.
- PROVIDE UL LISTED MOLDABLE PUTTY PADS TO SEAL ANNULAR SPACES/PENETRATIONS AROUND ALL JUNCTION BOXES.

POWER NOTES

- ALL CONDUIT, WIRING AND ELECTRICAL EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST STANDARDS OF THE NATIONAL & STATE ELECTRICAL CODES AND ANY APPLICABLE LOCAL REGULATIONS.
- ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD, EXCEPT WHERE SPECIFIC DIMENSIONS AND DETAILS ARE SHOWN. ALL CONDUIT RUNS SHALL BE RIGIDLY SUPPORTED.
- NO CONDUIT SMALLER THAN 3/4" INCH ELECTRICAL TRADE SIZE SHALL BE USED, UNLESS SPECIFICALLY CALLED FOR ON THE DRAWINGS.
- PERFORM WORK AND PROVIDE MATERIALS AND EQUIPMENT TO MAKE INSTALLATION COMPLETE IN EVERY DETAIL UNDER THIS CONTRACT WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS.
- CONDUCTORS AND CABLE SHALL BE MINIMUM #12 AWG, 600 VOLT, COPPER WITH TYPE THHN/THWN INSULATION. PROVIDE SEPARATE GREEN GROUND IN ALL FEEDERS. WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED, #10 AWG AND SMALLER SHALL BE SOLID. COLOR CODE CONDUCTORS BLACK, RED, BLUE, WITH WHITE NEUTRAL AND GREEN GROUND EXCEPT AS NOTED FOR 120 VOLT
- MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
  - CONVENIENCE RECEPTACLE (GENERAL), 1'-6" FROM FLOOR TO CENTERLINE.
  - TELEPHONE OUTLETS, 1'-6" FROM FLOOR TO CENTERLINE.

GENERAL NOTES

- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.
- ALL FLOOR, MASONRY WALLS AND STRUCTURAL CEILING PENETRATIONS SHALL BE SLEEVED.
- PROVIDE FIRE/MOISTURE SEAL FOR WALL, FLOOR OR CEILING PENETRATIONS.
- DO NOT LAY CABLES OR RACEWAY ON, OR SUPPORT FROM SUSPENDED CEILING OR PIPING AND DUCTWORK.
- OUTLET BOXES SHALL BE MOUNTED FLUSH. CONDUIT SHALL BE RUN CONCEALED. WHERE WALLS ARE BLOCK, DEVICES AND WIRING SHALL BE SURFACE MOUNTED. PROVIDE WIREMOLD OR EQUAL TO SURFACE MOUNTED RACEWAY WITH FINISHED BOXES.
- ALL WIRING WITHIN UTILITY CLOSETS MAY BE IN SURFACE MOUNTED CONDUIT. EMT MAY BE UTILIZED.
- FLEXIBLE CONDUIT CONNECTIONS SHALL BE A MAXIMUM OF 6'-0".
- MC TYPE CONDUCTOR WITH INTEGRAL GROUND WIRE MAY BE UTILIZED FOR POWER AND LIGHTING CIRCUITS. MC CABLE SHALL BE UTILIZED ONLY WHERE COMPLETELY CONCEALED.
- STEEL OR FIRE-RATED ELECTRICAL BOXES (SWITCHES, OUTLETS, JUNCTION BOXES, ETC.) SHALL BE PROVIDED AND INSTALLED IN ALL FIRE RATED ASSEMBLIES AS IN ACCORDANCE WITH BUILDING AND ELECTRICAL CODES. UL LISTED MOLDABLE PUTTY PADS OR FIREBLOCK/SPRAY FOAM INSULATE SHALL BE USED TO SEAL ALL ANNULAR SPACES/PENETRATIONS AROUND OUTLET BOXES. FIRE RATED ASSEMBLIES INCLUDE EXTERIOR WALLS, FIRE-RATED WALLS, FLOOR/CEILING ASSEMBLIES AND ROOF/CEILING ASSEMBLIES.

LIGHTING NOTES

- ALL CONDUIT, FIXTURES AND OUTLETS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD, EXCEPT WHERE SPECIFIC DIMENSIONS AND DETAILS ARE SHOWN.
- ALL LIGHTING FIXTURE SPACING DIMENSIONS AND MOUNTING HEIGHTS ARE RECOMMENDED LOCATIONS. SLIGHT VARIATIONS WHERE NECESSARY TO AVOID INTERFERENCE SHALL BE DETERMINED IN THE FIELD.
- MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
  - LIGHT SWITCHES, 4'-0" FROM FLOOR TO CENTERLINE.
  - LIGHTING PANELBOARDS, 6'-6" FROM FLOOR TO TOP.
  - LIGHT FIXTURES - SEE LIGHTING FIXTURE SCHEDULE, MOUNTING HEIGHT OF FIXTURE IS MEASURED TO BOTTOM OF REFLECTOR.
- WHERE REQUIRED, ADDITIONAL SUPPORT STEEL FOR THE LIGHTING INSTALLATION SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. SEISMIC RESTRAINTS SHALL BE INCLUDED AS PER STATE BUILDING CODE.
- PROVIDE SEPARATE UN-SWITCHED NEUTRAL TO ALL EXIT SIGNS, EMERGENCY BATTERY UNITS AND EMERGENCY LIGHT FIXTURES CONTAINING EMERGENCY PACKS OR BALLASTS.
- FOR RENOVATION PROJECTS, PROVIDE NEW BRANCH CIRCUITRY BETWEEN ALL NEW FIXTURES BEING PROVIDED, UNLESS NOTED OTHERWISE ON DRAWINGS.
- FIRE-RATED BOXES/ENCLOSURES FOR RECESSED LIGHTING FIXTURES SHALL BE PROVIDED AND INSTALLED IN FIRE-RATED ASSEMBLIES AS IN ACCORDANCE WITH BUILDING AND ELECTRICAL CODES. FIRE-RATED ASSEMBLIES INCLUDE; FIRE-RATED WALLS, FLOOR/CEILING ASSEMBLIES AND ROOF/CEILING ASSEMBLIES. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES.

ABBREVIATIONS

A/AMP	AMPERE	IMC	INTERMEDIATE METALLIC CONDUIT
AC	ALTERNATING CURRENT	JB	JUNCTION BOX
AF	AMPERE FRAME	KVA	KILOVOLT-AMPERE
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AFG	ABOVE FINISHED GRADE	LGT	LIGHTING
AIC	AMPERE INTERRUPTING CAPACITY	PWR	POWER
AL	ALUMINUM	MCB	MAIN CIRCUIT BREAKER
AT	AMPERE TRIP	MEC	MASSACHUSETTS ELECTRICAL CODE
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE	MTG	MOUNTING
CL	CENTERLINE	MTD	MOUNTED
CKT	CIRCUIT	MCC	MOTOR CONTROL CENTER
CB	CIRCUIT BREAKER	NEC	NATIONAL ELECTRICAL CODE
CU	COPPER	NS	NON-SYSTEM
CL	CENTERLINE	NIS	NOT TO SCALE
DC	DIRECT CURRENT	No. #	NUMBER
DE	DUAL ELEMENT	PC	PLUMBING CONTRACTOR
DWG	DRAWING	RPW	REVOLUTIONS PER MINUTE
EC	ELECTRICAL CONTRACTOR	RMS	ROOT MEAN SQUARE VALUE
EMH	ELECTRICAL MANHOLE	RCS	RIGID STEEL CONDUIT
EWG	ELECTRIC WATER COOLER	SF	SQUARE FOOT
EMT	ELECTRIC METALLIC CONDUIT	SN	SOLID NEUTRAL
FLMT	FLEXIBLE LIQUID TIGHT METALLIC TUBING	ST	SHUTT TRIP CIRCUIT BREAKER
GC	GENERAL CONTRACTOR	SWBD	SWITCHBOARD
GND	GROUND	TYP	TYPICAL
GF	GROUND FAULT CIRCUIT BREAKER	V	VOLTS
GF	GROUND FAULT INTERRUPTING	VA	VOLT-AMPERE
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSEPOWER	WP	WEATHERPROOF

BRANCH CIRCUIT AND FEEDER SYMBOLS

	BRANCH CIRCUIT OR FEEDER CONCEALED UNLESS OTHERWISE NOTED. BRANCH CIRCUIT DIAGONAL LINES INDICATE NUMBER OF CONDUCTORS, GROUND WIRE(S) NOT INDICATED. MINIMUM SIZE CONDUCTOR #12 AWG AND 3/4" CONDUIT, UNLESS OTHERWISE NOTED
	FLEXIBLE CONNECTION TO MOTOR OR EQUIPMENT
	HOMERUN TO PANELBOARD "P1" CIRCUIT NUMBER 1. DIAGONAL LINES INDICATE (1) PHASE AND (1) NEUTRAL CONDUCTOR. (1) GROUNDING CONDUCTOR UNDERSTOOD.
	HOMERUN TO PANELBOARD "P1" CIRCUIT NUMBER 1 & 3. DIAGONAL LINES INDICATE (2) PHASE AND (2) NEUTRAL CONDUCTOR. (2) GROUNDING CONDUCTOR UNDERSTOOD.
	HOMERUN TO PANELBOARD "P1" CIRCUIT NUMBER 1, 3 & 5. DIAGONAL LINES INDICATE (3) PHASE AND (3) NEUTRAL CONDUCTOR. (3) GROUNDING CONDUCTOR UNDERSTOOD.
	HOMERUN TO PANELBOARD "P1" CIRCUIT NUMBER 1, 3 & 5. DIAGONAL LINES INDICATE (3) PHASE AND (1) NEUTRAL CONDUCTOR. (1) GROUNDING CONDUCTOR UNDERSTOOD.
	HOMERUN TO PANELBOARD "P1" CIRCUIT NUMBER 1, 3 & 5. DIAGONAL LINES INDICATE (3) PHASE CONDUCTORS. NEUTRAL CONDUCTOR NOT REQUIRED. (1) GROUNDING CONDUCTOR UNDERSTOOD.

SWITCHING SYMBOLS

	S <sub>o</sub> SINGLE POLE SWITCH, RATED 20A, 120/277V, MOUNTING HEIGHT 48" TO CENTERLINE OF TOGGLE SWITCH IN "ON" POSITION, "o" DENOTES FIXTURE SWITCH CONTROL
	S <sub>3</sub> THREE WAY SWITCH, RATED 20A, 120/277V, MOUNTING HEIGHT 48" TO CENTERLINE OF TOGGLE SWITCH IN "ON" POSITION, "o" DENOTES FIXTURE SWITCH CONTROL
	S <sub>w</sub> MANUAL MOTOR STARTER, RATED 20A, 250V, COORDINATE MOUNTING HEIGHT IN FIELD, MOUNTING HEIGHT SHALL NOT EXCEED 6'-7" AFF

DEMOLITION NOTES

- REFER TO THE ARCHITECTURAL DRAWINGS FOR THE FULL EXTENT OF THE SCOPE OF DEMOLITION. DISCONNECT AND MAKE SAFE ALL ELECTRICAL EQUIPMENT IDENTIFIED FOR REMOVAL ON THE HVAC, PLUMBING AND FIRE PROTECTION PLANS. THE ELECTRICAL SCOPE MAY EXTEND BEYOND THE AREA DEFINED BY THE ARCHITECTURAL DEMOLITION LIMITS TO FULLY COMPLY WITH VARIOUS REQUIREMENTS DEFINED BY THESE NOTES.
- THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF THE WORK. DAMAGE SHALL INCLUDE BUT NOT BE LIMITED TO DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR TO BE SALVAGED.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY OTHERS. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED SPARE.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.
- ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
- THE EXISTING FIRE ALARM SYSTEM SHALL REMAIN FULLY FUNCTIONAL DURING THE ENTIRE DEMOLITION AND CONSTRUCTION PERIOD. REUSE OF EXISTING FIRE ALARM SYSTEM RACEWAYS SHALL NOT BE ALLOWED. ALL REQUIRED SYSTEM SHUTDOWNS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE AND THE AUTHORITY HAVING JURISDICTION. DEMOLITION OF THE EXISTING SYSTEM SHALL NOT COMMENCE UNTIL THE NEW SYSTEM HAS BEEN COMPLETELY INSTALLED, TESTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE SYSTEMS INCLUDING BUT NOT LIMITED TO TELEPHONE, DATA, SECURITY, PAGING, CCTV, ETC. SHALL BE INCLUDED IN THIS CONTRACT.
- REMOVED FLUORESCENT AND HID LAMPS AND BATTERIES SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE. A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PREPARED FOR ALL DISPOSALS AND RETURNED WITH ALL APPLICABLE SIGN OFF'S PRIOR TO APPLICATION FOR FINAL PAYMENT.
- ALL BALLAST IN LIGHTING FIXTURES TO BE DISPOSED SHALL BE VERIFIED TO BE PCB FREE. ALL BALLAST MANUFACTURED PRIOR TO 1979 AND NOT LABELED AS PCB FREE SHALL BE CONSIDERED TO CONTAIN PCBs. PROVIDE WRITTEN VERIFICATION TO THE OWNER'S REPRESENTATIVE THAT CONFIRMS PCB FREE WASTE. WHERE PCB FREE WASTE CANNOT BE VERIFIED, BALLAST SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE, WITH PCB COMPONENTS ELIMINATED BY A HIGH TEMPERATURE INCINERATION. A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PREPARED FOR ALL DISPOSAL AND RETURNED WITH ALL APPLICABLE SIGN OFF'S PRIOR TO APPLICATION FOR FINAL PAYMENT. ALL HANDLING SHALL CONFORM TO EPA REQUIREMENTS. PROVIDE BREAKOUT COST FOR THIS SCOPE.

LIGHTING FIXTURE SYMBOLS

	FLUORESCENT LIGHTING FIXTURE, CEILING/SURFACE/RECESSED/PENDANT OR WALL MOUNTED. "A" DENOTES LIGHTING FIXTURE TYPE (SEE FIXTURE SCHEDULE), "2" DENOTES CIRCUIT NUMBER, "o" DENOTES SWITCH CONTROL
	COMPACT FLUORESCENT LIGHT FIXTURE, CEILING/SURFACE/RECESSED OR PENDANT MOUNTED. "B" DENOTES LIGHTING FIXTURE TYPE, "4" DENOTES CIRCUIT NUMBER, "b" DENOTES SWITCH CONTROL
	FLUORESCENT LIGHTING FIXTURE CONNECTED TO THE EMERGENCY GENERATOR, OR CONTAINS AN EMERGENCY BALLAST. SEE LIGHTING NOTE 5.
	EMERGENCY BATTERY UNIT WITH TWO (2) HEADS
	EXIT SIGN, SHADED REGION INDICATES FACE

EXISTING EQUIPMENT DESIGNATIONS

X	EXISTING TO BE REMOVED. REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS.
XM	EXISTING TO REMAIN.
XN	EXISTING EQUIPMENT TO BE REPLACED WITH NEW. CONNECT NEW EQUIPMENT TO EXISTING CIRCUIT.
XR	EXISTING EQUIPMENT TO BE RELOCATED. JUNCTION AND EXTEND EXISTING CONDUIT AND CONDUCTORS.
XL	NEW LOCATION FOR EXISTING EQUIPMENT. JUNCTION AND EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.

OCCUPANCY SENSORS

- WALL MOUNTED OCCUPANCY SENSOR, 180°, 300SF COVERAGE (20'W x 25'L), PHILIPS LIGHTING CONTROLS No. ITS2U-COLOR OR EQUAL
- CEILING MOUNTED OCCUPANCY SENSOR, 360° TWO-SIDED, 1950SF COVERAGE (50' DIAMETER), PHILIPS LIGHTING CONTROLS No. ITSOS (FOR PARTIAL COVERAGE APPLICATIONS, A PROVIDED MASK CAN BE TRIMMED TO ADJUST COVERAGE) OR EQUAL
- COVERAGE DIMENSIONS APPLY TO DEVICE BEING CENTERED. ACTUAL COVERAGE'S CAN VARY ON THE SHAPE AND USE OF APPLICABLE SPACE. COVERAGE MAY BE REDUCED IF DEVICE IS MOUNTED GREATER THAN 12 FEET HIGH. SENSORS REQUIRE RELAY PACKS, PHILIPS LIGHTING CONTROLS No. ITSRP1U (SINGLE CIRCUIT), ITSRP2 (TWO CIRCUIT) OR ITSRP4 (FOUR CIRCUIT).

RECEPTACLES AND OUTLETS

	5 DUPLEX CONVENIENCE RECEPTACLE OUTLET, GROUNDING TYPE, RATED 20A, 125V TYPE. "5" DENOTES CIRCUIT NUMBER, MOUNTING HEIGHT 18" TO CENTERLINE AFF
	GROUND FAULT INTERRUPTING OUTLET, RATED 20A, 125V RECEPTACLE, MOUNTING HEIGHT 18" TO CENTERLINE AFF
	DUPLEX CONVENIENCE OUTLET, MOUNTING HEIGHT 42" TO CENTERLINE AFF OR 6" ABOVE COUNTER TOP
	GROUND FAULT DUPLEX RECEPTACLE, MOUNTING HEIGHT 42" TO CENTERLINE AFF OR MOUNTED 6" ABOVE COUNTER TOP
	DOUBLE DUPLEX CONVENIENCE OUTLET, MOUNTING HEIGHT 18" TO CENTERLINE AFF
	JUNCTION BOX, COORDINATE MOUNTING HEIGHT WITH ARCHITECT, "f" INDICATES FAN RATED JUNCTION BOX

MOTOR AND CONTROLS

	1.5 MOTOR, NUMERAL INDICATES HORSEPOWER
	3R DISCONNECT SWITCH, NON-FUSIBLE TYPE, RATED 30A/3P, IN NEMA TYPE "1" ENCLOSURE, UNLESS OTHERWISE NOTED. "3R" DENOTES NEMA TYPE ENCLOSURE
	30AF 20AT DISCONNECT SWITCH, FUSED TYPE, RATED 30A, 20A FUSE, 3 POLE IN NEMA TYPE "1" ENCLOSURE, UNLESS OTHERWISE NOTED

PANELBOARD AND TERMINAL CABINET

	120/208VOLT LIGHTING OR POWER PANEL, SURFACE MOUNTED
	120/208VOLT LIGHTING OR POWER PANEL, RECESSED MOUNTED

MISCELLANEOUS

	MECHANICAL EQUIPMENT TAG, REFER TO MECHANICAL SCHEDULE
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Drawing Title:

ELECTRICAL  
LEGEND &  
NOTES

Revisions:

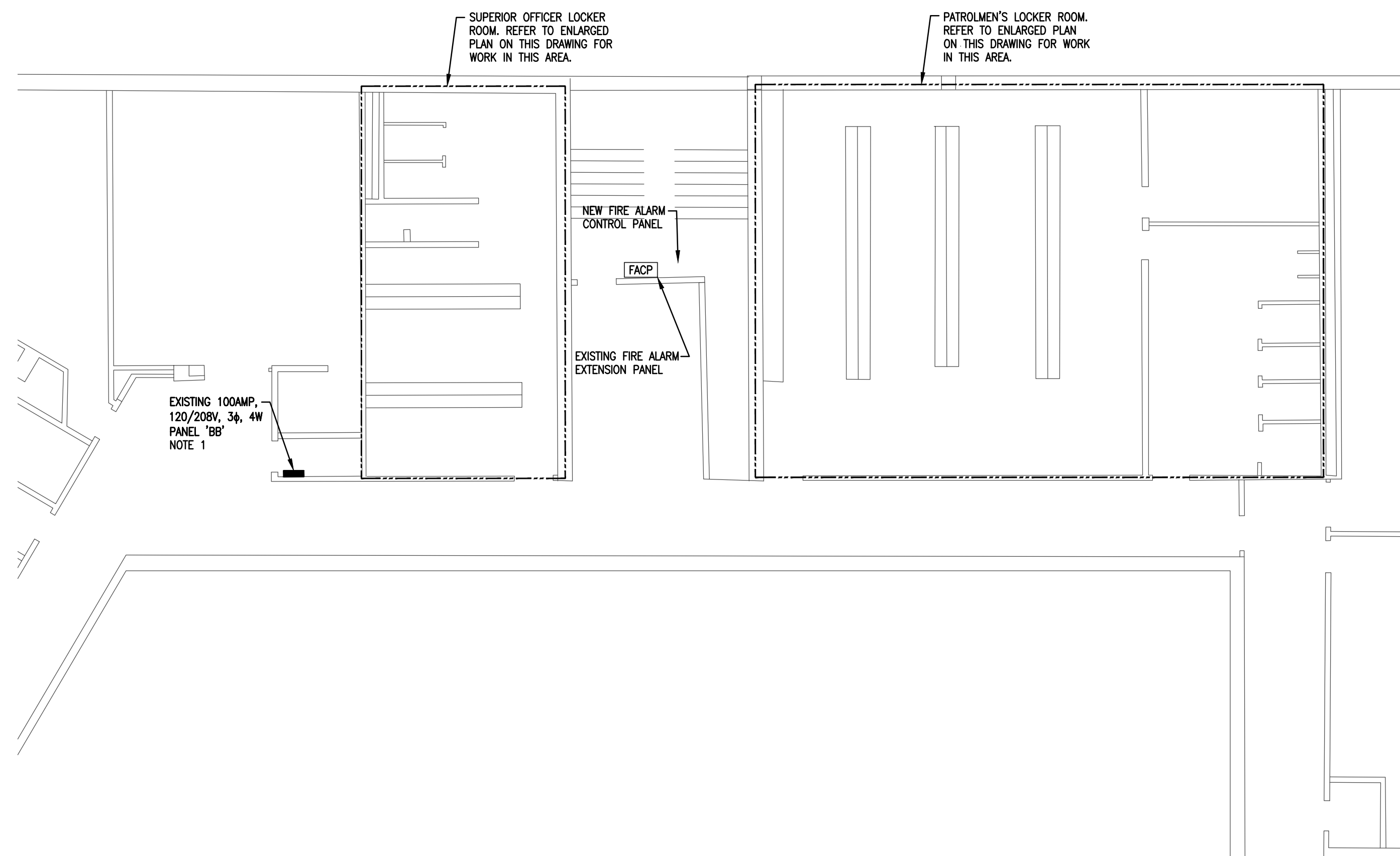
Submission:

BID DOCUMENTS

Date:	03/04/20
Project Number:	BLW17263
Project Manager:	KB
Drawn By:	MG/JMG
Scale:	AS NOTED

E0-01

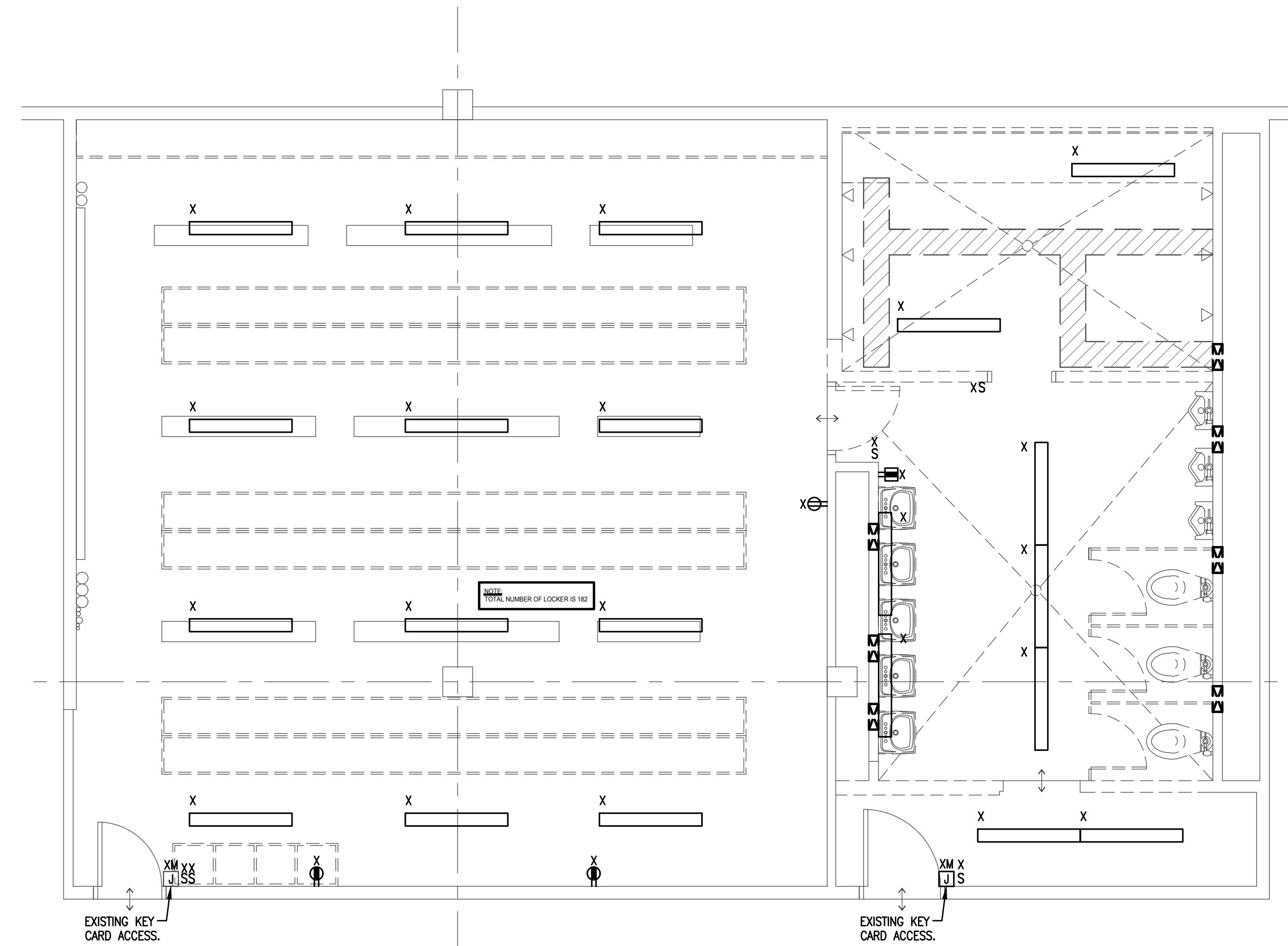




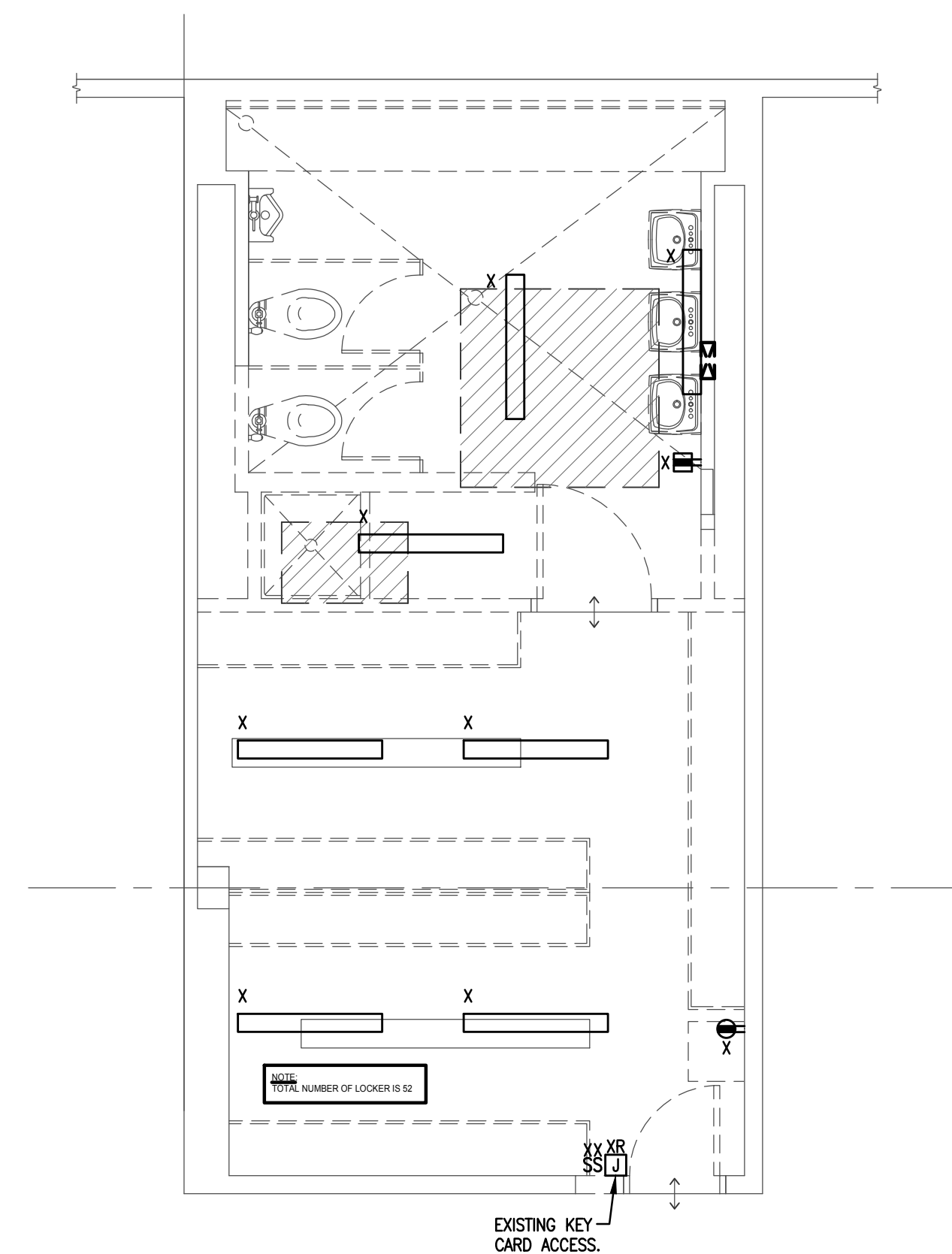
1  
ELECTRICAL-  
KEY PLAN  
SCALE: 1/8"=1'-0"

DEMOLITION NOTES:

1. E.C. SHALL DISCONNECT AND REMOVE EXISTING (2) 20A/1P CIRCUIT BREAKERS (CKTS. 9,11). PROVIDE NEW 20A/2P CIRCUIT BREAKER IN SPACE MADE AVAILABLE, FOR LOCKER ROOM EXHAUST FAN. NEW CIRCUIT SHALL BE U.L. COMPATIBLE.



2  
ELECTRICAL-  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"



3  
ELECTRICAL-  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"



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Drawing Title:

ELECTRICAL  
DEMOLITION  
FLOOR PLAN

Revisions:

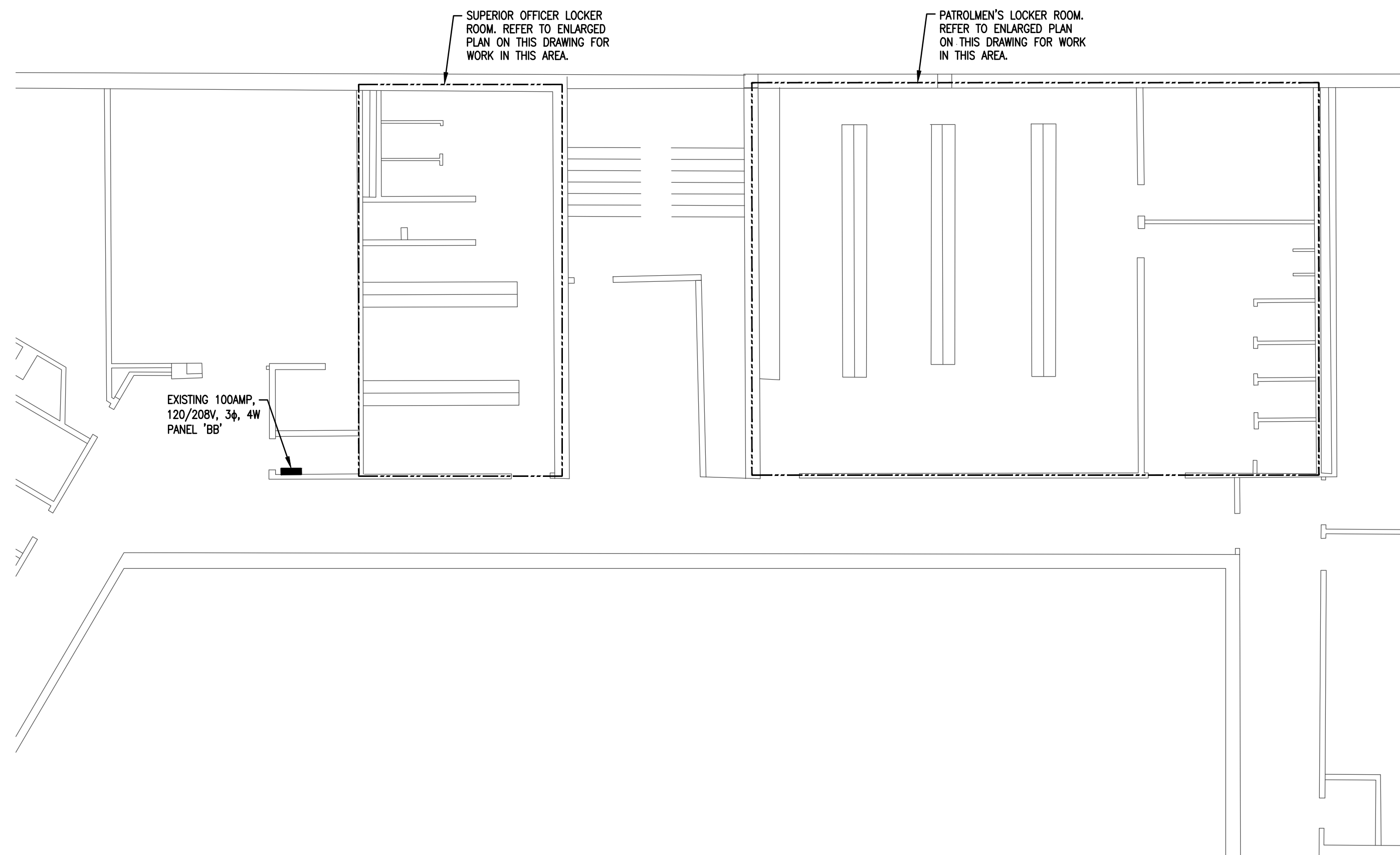
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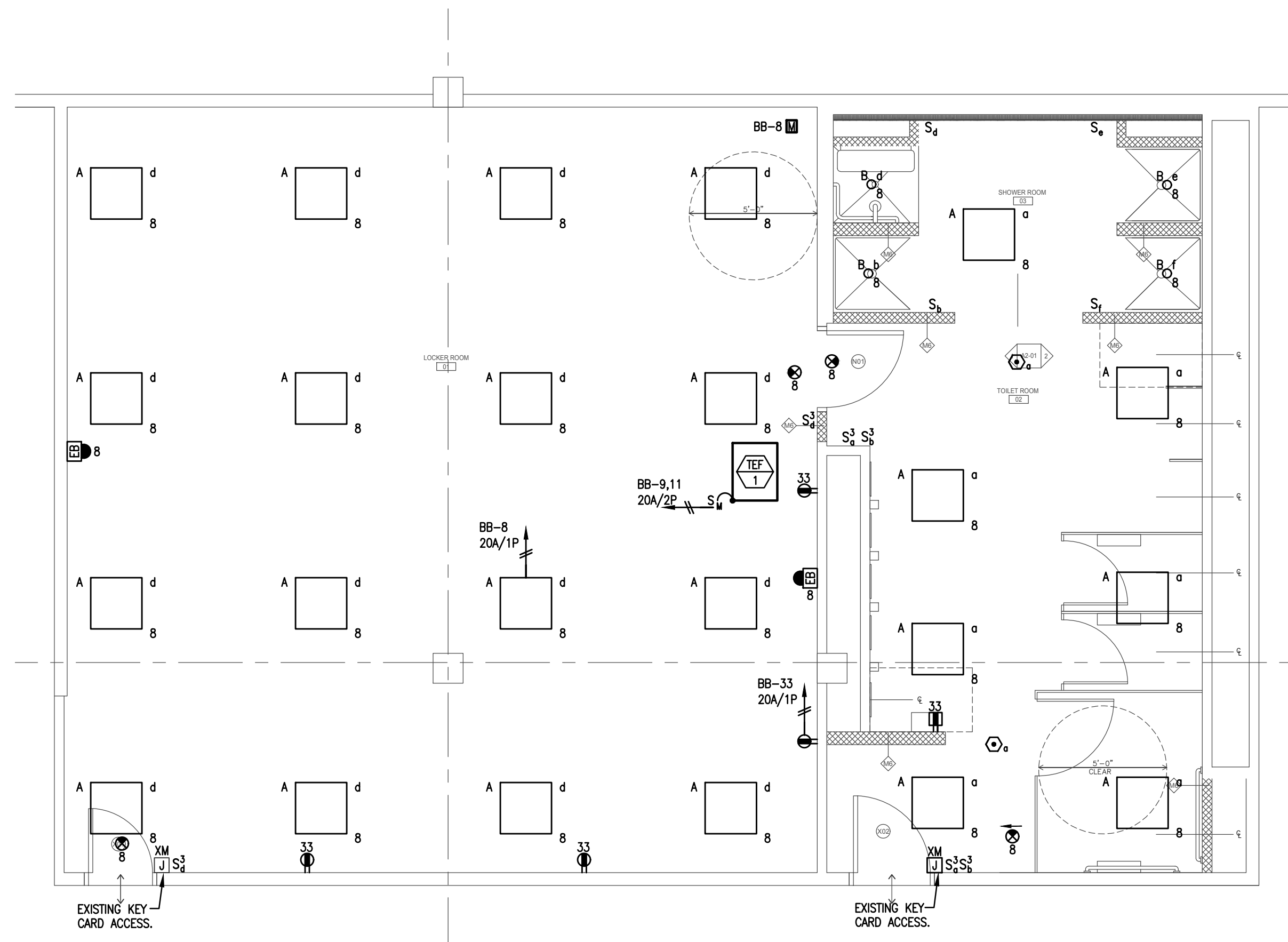
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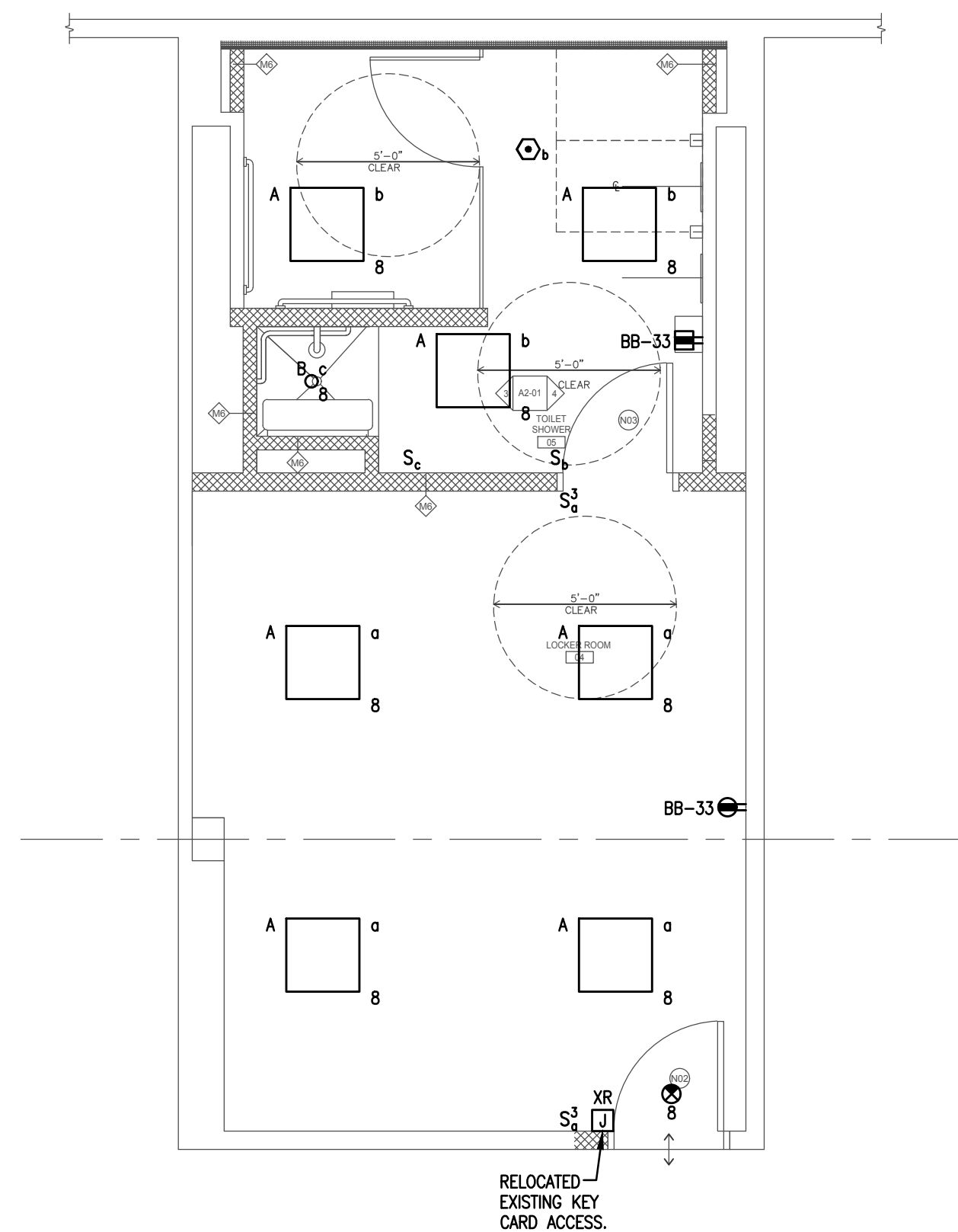


1  
ELECTRICAL-  
KEY PLAN  
SCALE: 1/8"=1'-0"

LIGHTING FIXTURE SCHEDULE								
FIXTURE TYPE	DESCRIPTION	MANUFACTURER AND CATALOG NUMBER	LIGHT SOURCE					VOLTAGE
			LUMENS	TEMP (K)	No.	WATTAGE	TYPE	
A	2'X2' FLAT PANEL	LITHONIA CPX2X23200LM35KMH	-	-	1	30	LED	120
B	WET RATED RECESSED DOWNLIGHT	LITHONIA WTFLED30KMM	-	-	1	13	LED	120
	SINGLE FACE EDGE LIT EXIT SIGN, REFER TO FLOOR PLANS FOR DIRECTIONAL ARROWS AND MOUNTING TYPES (WALL/CEILING)	EXITRONIX # S902-WB-SR-RC-BA	-	-	1	4	LED	120



2  
ELECTRICAL-  
PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"



3  
ELECTRICAL-  
SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"

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LOWELL, MA 01852

Drawing Title:

**ELECTRICAL  
LOW VOLTAGE  
NEW WORK  
FLOOR PLAN**

Revisions:

Submission:

**BID DOCUMENTS**

Date: 03/04/20  
Project Number: BLW17263  
Project Manager: KB  
Drawn By: MG/JMG  
Scale: AS NOTED

**E1-01**

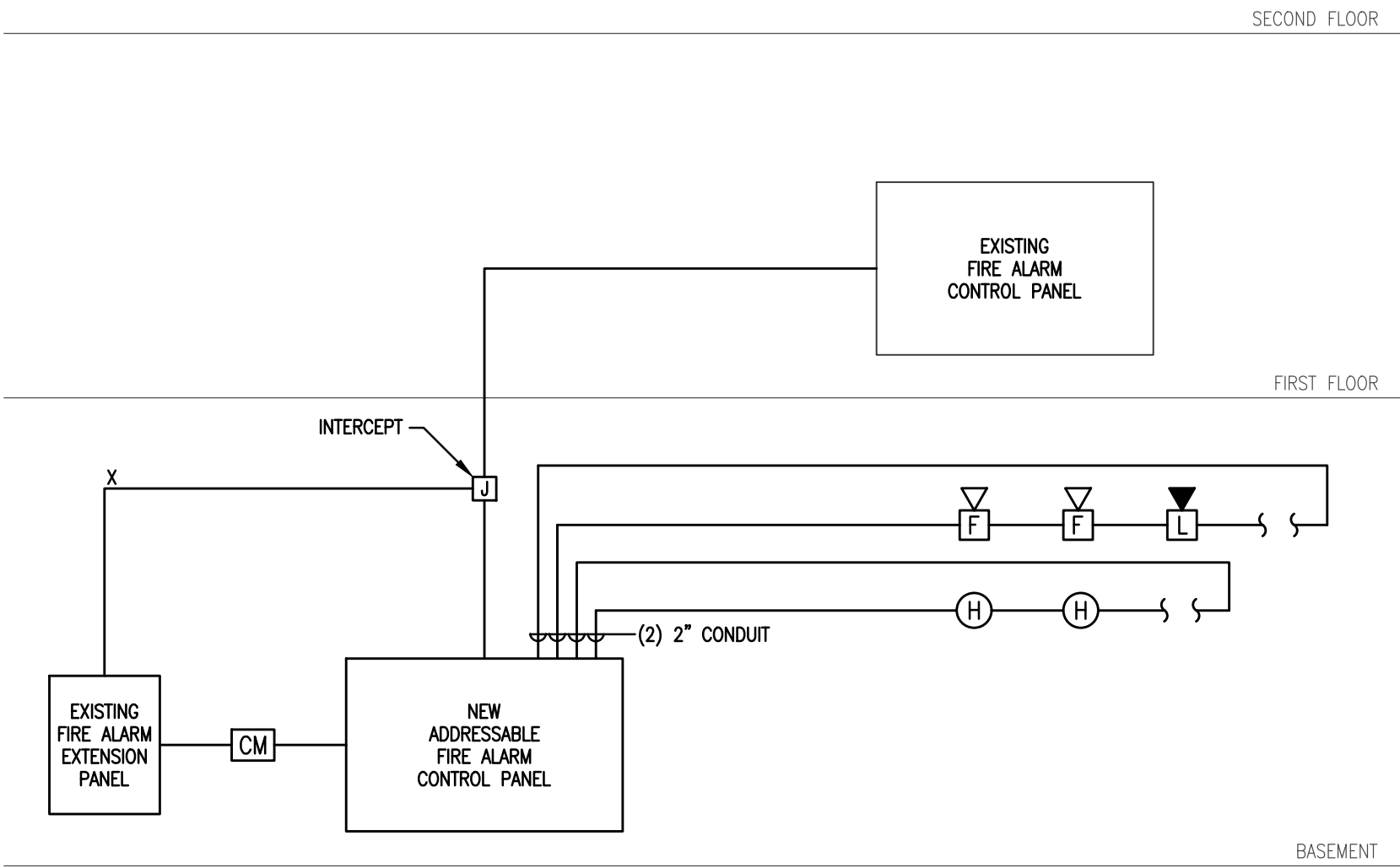


FIRE ALARM NOTES

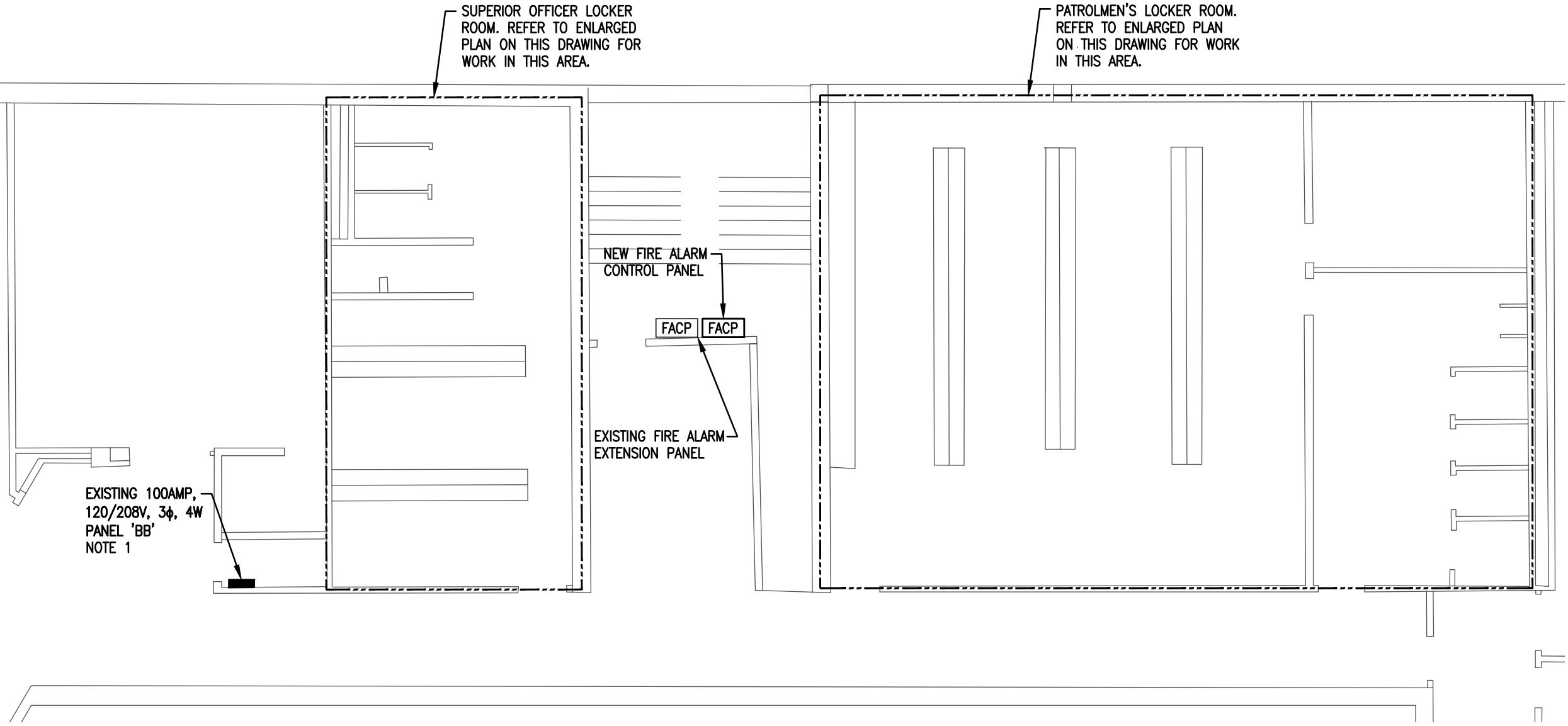
1. THE ELECTRICAL CONTRACTOR SHALL COMPLETE A CERTIFICATE CERTIFYING THAT THE SYSTEM HAS BEEN 100 PERCENT TESTED AND FUNCTIONS IN COMPLETE COMPLIANCE WITH THE SYSTEM SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS. THE CERTIFICATE SHALL BE SIGNED BY THE INSTALLER, ELECTRICAL CONTRACTOR AND THE OWNER. AFTER RECEIPT OF THE CERTIFICATION, THE FIRE PREVENTION OFFICER AND/OR THE FIRE ALARM SUPERVISOR WILL CONDUCT AN INSPECTION IN THE COMPANY OF THE INSTALLER AND A REPRESENTATIVE OF THE OWNER WITHIN SCOPE OF WORK PLUS 10% OF EXISTING.
2. ALL FIRE ALARM VISUAL DEVICES SHALL BE SYNCHRONIZED.
3. ALL WIRING METHODS SHALL BE AS APPROVED BY THE WIRING INSPECTOR AND THE FIRE DEPARTMENT. ALL FIRE ALARM CABLE SHALL BE PLENUM RATED.
4. ALL SYSTEM COMPONENTS SHALL BE UL LISTED. IF EXISTING EQUIPMENT IS BEING UTILIZED ALL COMPONENTS MUST BE UL LISTED COMPATIBLE WITH EXISTING.
5. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA 72 SERIES PAMPHLETS, AND ALL STATE AND LOCAL CODES.
6. THE ELECTRICAL CONTRACTOR MUST OBTAIN AN ELECTRICAL PERMIT FROM THE TOWN BUILDING DEPARTMENT AND A PERMIT FROM THE FIRE DEPARTMENT PRIOR TO COMMENCEMENT OF EQUIPMENT INSTALLATION. A FLOOR PLAN SHOWING ALL ALARM DEVICES, LOCATION OF MASTER BOX, PANELS, ANNUNCIATORS, A ONE-LINE WIRING DIAGRAM AND AN ANNUNCIATOR DETAIL SHOWING ZONE LABELING WILL BE REQUIRED TO BE SUBMITTED BEFORE THE FIRE DEPARTMENT ISSUES A PERMIT.
7. INSTALLATION OF EQUIPMENT SHALL BE IN ACCORDANCE WITH CURRENT STANDARDS AND SPECIFICATIONS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
8. ALL FIRE ALARM EQUIPMENT, INSTALLATION AND OPERATION SHALL BE IN CONFORMANCE WITH THE LOCAL FIRE DEPARTMENT INSTALLATION REQUIREMENTS AND SYSTEM INSTALLATION GUIDELINES.
9. ALL EQUIPMENT SHOWN ON DRAWINGS IS DIAGRAMMATIC.
10. PROVIDE AND INSTALL ALL NECESSARY WIRE, CONDUIT, RELAYS AND CONNECTIONS FROM ALL DUCT SMOKE DETECTORS TO THEIR ASSOCIATED RETURN AND SUPPLY FAN CONTROLLERS. UPON ACTIVATION OF A DUCT SMOKE DETECTOR, IN ADDITION TO SOUNDING THE GENERAL ALARM, THE DUCT SMOKE DETECTOR SHALL IMMEDIATELY SHUT DOWN THE ASSOCIATED FAN.
11. THE FIRE ALARM SYSTEM SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY BOTH THE ENGINEER AND THE LOCAL FIRE DEPARTMENT. THE SHOP DRAWINGS MUST BE SIGNED OFF BY THE FIRE DEPARTMENT AND ENGINEER PRIOR TO ORDERING AND INSTALLATION OF EQUIPMENT.
12. ABSOLUTELY NO CONNECTIONS WILL BE MADE TO THE MUNICIPAL FIRE ALARM CIRCUITS, EXCEPT BY LOCAL FIRE DEPARTMENT PERSONNEL.
13. ALL WORK BEYOND THE MASTER BOX AND INSIDE OF THE BUILDING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL JOINTS AND CONNECTIONS SHALL BE IN JUNCTION BOXES. ALL CONNECTIONS NOT ON APPROVED TERMINAL STRIPS SHALL BE SOLDERED AND TAPED. ALL JUNCTION BOXES SHALL BE PAINTED RED.
15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THAT ALL CONNECTING WIRING MAINTAIN ELECTRICAL INTEGRITY, WITH NO OPEN CIRCUITS, GROUNDING, LEAKAGE OR OTHER FAULTS. CONNECTION TO THE MUNICIPAL SYSTEM WILL NOT BE PERMITTED IF ANY FAULTS EXIST, AND THE CONTRACTOR HAS THE PERMANENT RESPONSIBILITY FOR THE MAINTENANCE OF ALL SUCH WIRING FOR A ONE-YEAR PERIOD. IF FAULTS DEVELOP AFTER INSTALLATION, CORRECTION MUST BE MADE BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE DATE OF FINAL COMPLETION. THE FIRE DEPARTMENT MAY REQUIRE DISCONNECTION OF THE FIRE ALARM BOX FROM THE MUNICIPAL SYSTEM UNTIL PROPER CONNECTIONS AND/OR REPAIRS ARE MADE. SUCH A DISCONNECTION MAY REQUIRE A FIRE WATCH DURING THAT TIME THE BUILDING IS WITHOUT A MASTER FIRE ALARM BOX AND ALARM SYSTEM. THIS FIRE WATCH WILL BE AT THE FIRE DEPARTMENT'S DIRECTION AND PAYMENT FOR SUCH A WATCH WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL REQUIRED POWER SUPPLIES FOR A COMPLETE AND OPERATIONAL SYSTEM. POWER SUPPLY CALCULATIONS SHALL BE INCLUDED IN FIRE ALARM SUBMITTAL.
17. ALL EQUIPMENT SHALL BE MADE AVAILABLE FOR TEST AND INSPECTION WHEN REQUIRED BY THE FIRE DEPARTMENT.
18. ALL EQUIPMENT USED SHALL BE OF A TYPE APPROVED BY THE FIRE CHIEF THROUGH THE ALARM SUPERINTENDENT AND THE FIRE PREVENTION OFFICER.
19. ALL SYSTEMS SHALL BE DC, SUPERVISED, BATTERY STANDBY FIRE ALARM SYSTEM. A SEPARATE AC CIRCUIT MUST BE PROVIDED FOR THE FIRE ALARM SYSTEM. STANDBY BATTERIES AND THE CHARGING SYSTEM SHALL BE SUPERVISED.
20. PER NFPA 72 10.6.7.2 THE BATTERIES USED WITH THE FIRE ALARM CONTROL PANEL SHALL BE CAPABLE OF OPERATING THE PANEL FOR TWENTY-FOUR (24) HOURS WITH A [FIVE (5)] MINUTE RING-DOWN AT THE END OF THE TWENTY-FOUR (24) HOUR PERIOD. THE CALCULATION USED TO DETERMINE BATTERY CAPACITY SHALL BE PRESENTED TO THE FIRE DEPARTMENT AT THE TIME OF INSPECTION. PROVIDE BATTERY CALCULATIONS WITH SHOP DRAWINGS.
21. ALL FIRE ALARM CONTROL PANELS SHALL HAVE A SIGN, RED IN COLOR, WITH THE WORDS "FIRE ALARM CONTROL" ENGRAVED ON IT. THE SIGN SHALL BE ON THE FRONT OF THE PANEL WITH MINIMUM ONE (1) INCH LETTERS.
22. UPON ACTIVATION OF ANY FIRE ALARM DEVICE, THE CONTROL PANEL SHALL SOUND THE EVACUATION SIGNALS, FLASH THE EVACUATION LIGHTS, INDICATE THE DEVICE OF ACTIVATION AT THE MASTER BOX.
23. THE VISUAL INDICATORS OF THE EVACUATION SIGNALS MUST STAY ILLUMINATED UNTIL THE SYSTEM IS RESET.

FIRE ALARM SYSTEM

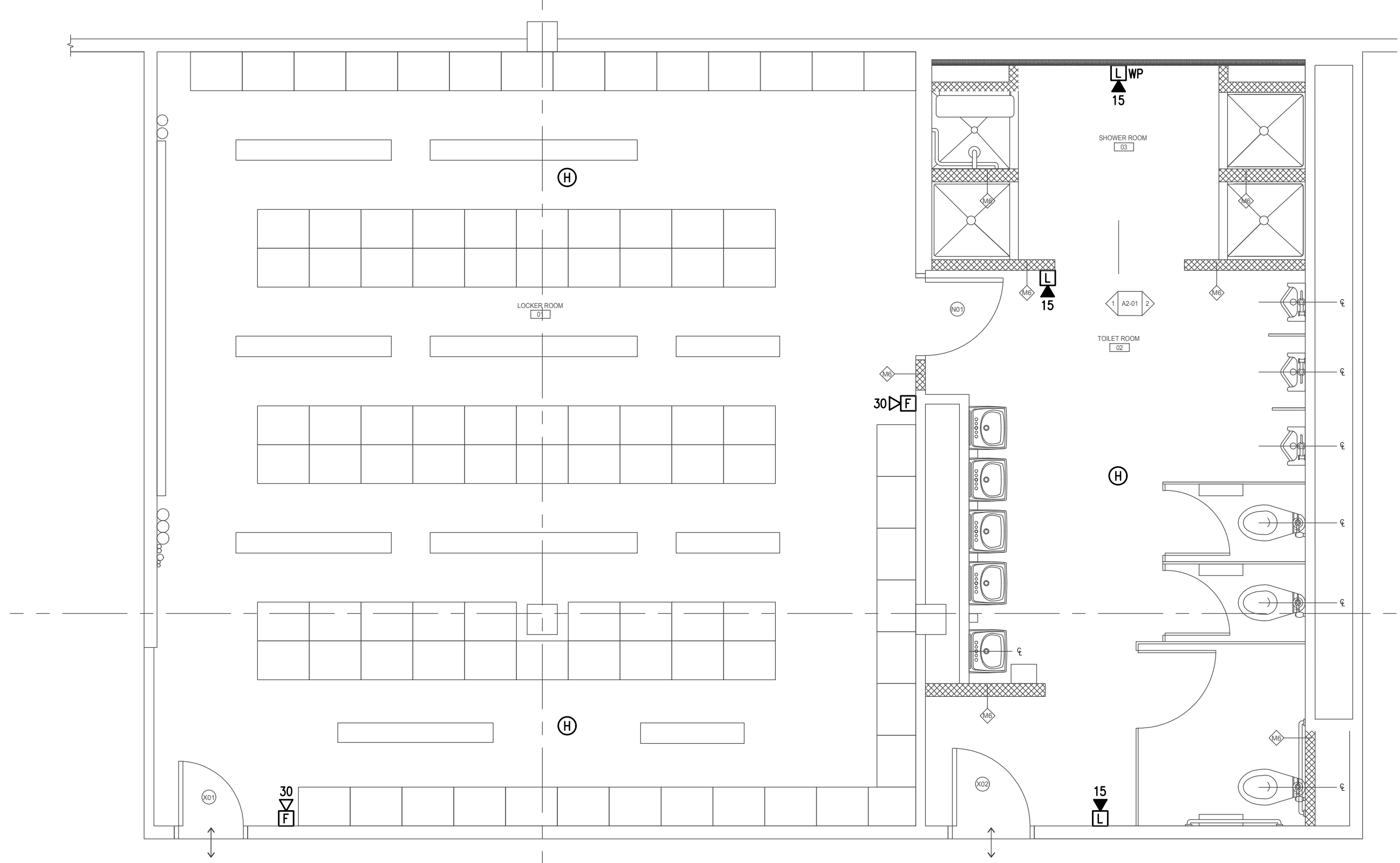
- 15 AUDIBLE/VISUAL DEVICE, TOP OF DEVICE MOUNTED NOT LESS THAN 90" AFF AND NOT LESS THAN 6" BELOW FINISHED CEILING
- 15 VISUAL DEVICE, ENTIRE LENS MOUNTED NOT LESS THAN 80" AFF AND NOT MORE THAN 96" AFF
- 15 CEILING MOUNTED AUDIBLE/VISUAL DEVICE
- 15 CEILING MOUNTED VISUAL DEVICE
- F MANUAL PULL STATION, MOUNTING HEIGHT 48" TO CENTERLINE AFF
- S SMOKE DETECTOR
- H F HEAT DETECTOR, "F" INDICATES 190° FIXED TEMPERATURE
- FS FLOW SWITCH
- PS PRESSURE SWITCH
- TS TAMPER SWITCH
- ANN FIRE ALARM ANNUNCIATOR PANEL
- FAC FIRE ALARM TERMINAL CABINET
- FACP FIRE ALARM CONTROL PANEL



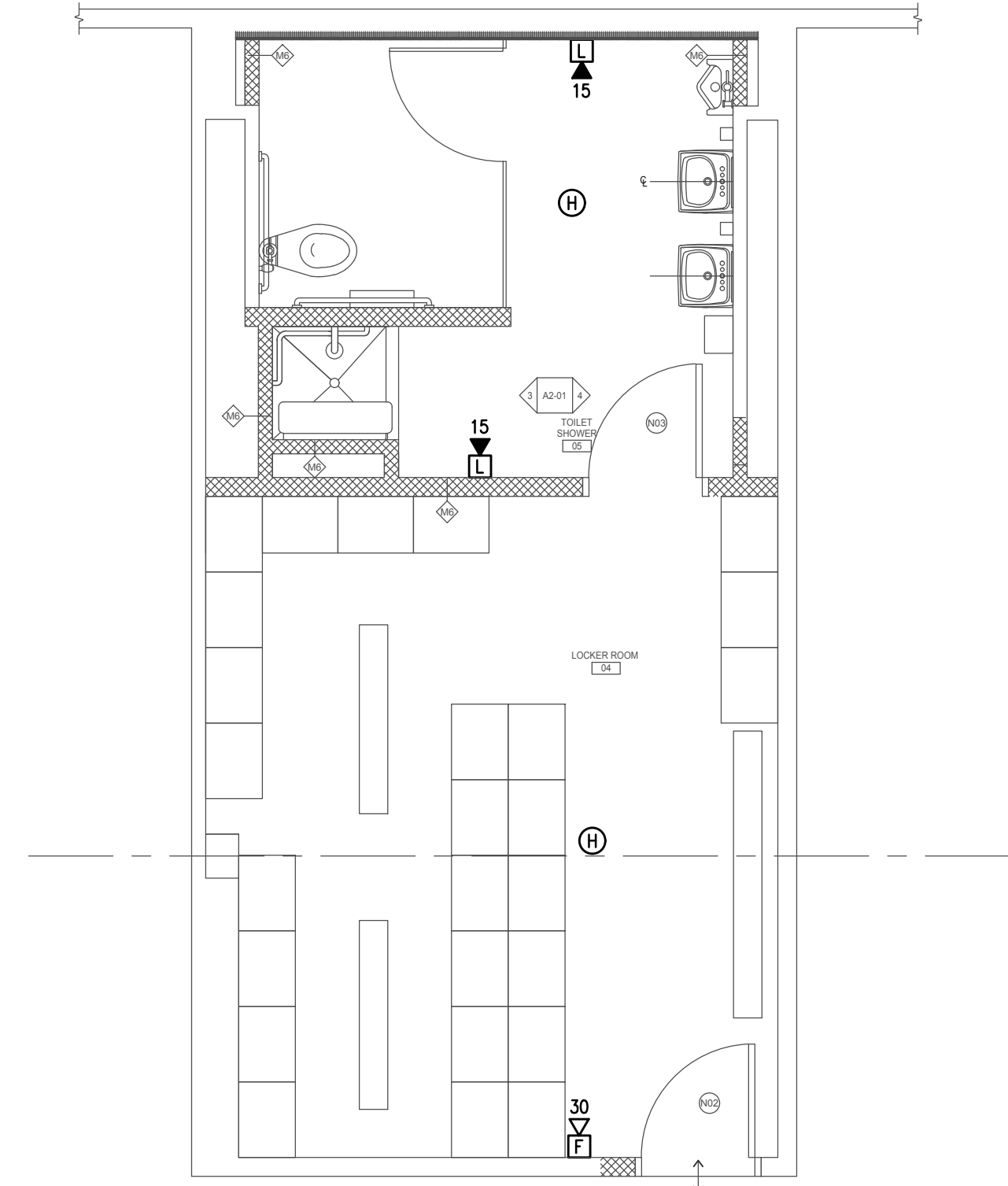
PARTIAL FIRE ALARM RISER DIAGRAM  
N.T.S.



ELECTRICAL-KEY PLAN  
SCALE: 1/8"=1'-0"



ELECTRICAL-PATROLMEN'S LOCKER ROOM  
SCALE: 1/4"=1'-0"



ELECTRICAL-SUPERIOR OFFICER LOCKER ROOM  
SCALE: 1/4"=1'-0"



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LOCKER ROOM  
RENOVATIONS



CITY OF LOWELL  
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Drawing Title:

FIRE ALARM  
NEW WORK  
FLOOR PLAN

Revisions:

Submission:

BID DOCUMENTS

Date: 03/04/20  
Project Number: BLW17263  
Project Manager: KB  
Drawn By: MG/JMG  
Scale: AS NOTED

FA0-01